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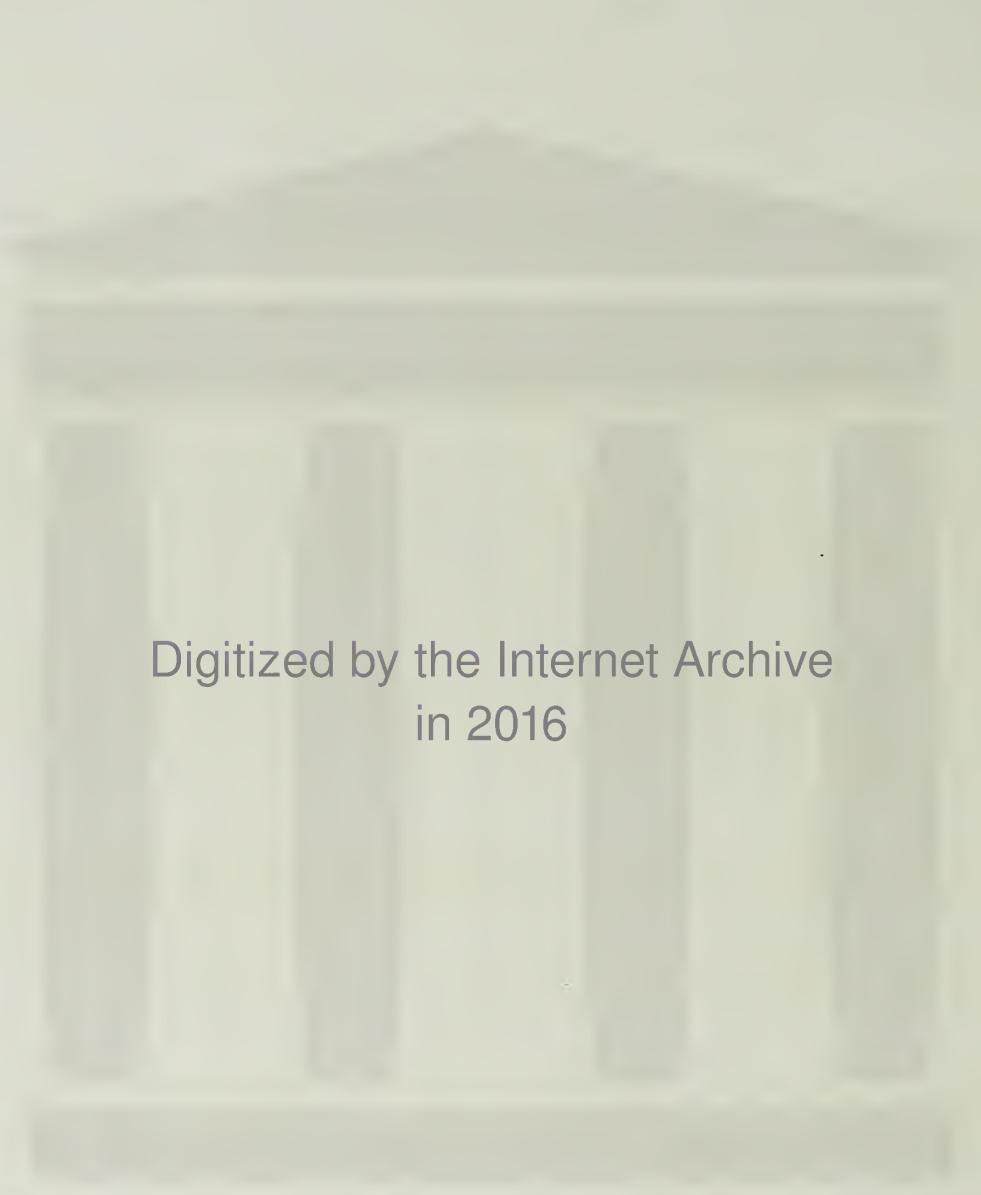
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I N S E C T P E S T S U R V E Y B U L L E T I N

Volume 21

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THE MORE IMPORTANT RECORDS FOR MAY

The grasshopper situation in the extreme Southwest now indicates that populations are lighter than expected and, even where abundant, have not migrated into crops on account of heavy growth of vegetation on field margins. Hatching is well completed with several species and the two-striped has begun hatching. Rather heavy populations are reported from parts of western Oklahoma and Kansas and extreme southwestern Oklahoma. However, in general, crop conditions are better than usual in these areas and, since there is luxuriant marginal vegetation, only a minimum of hopper damage may occur. In northwestern North Dakota and south-central South Dakota rather heavy populations were observed during the month.

Mormon cricket infestations have been unusually heavy in eastern Washington and Oregon, and crickets are now in the adult stage. No appreciable damage had occurred in Oregon up to the middle of the month, owing to control activities. Large bands of fifth-instar Mormon crickets have been reported migrating in Lyman County, S. Dak. A heavy infestation was observed during the latter half of the month in the Beaverhead National Forest, in Montana. Cricket infestation in western Idaho is greater than was anticipated.

The first outbreak of the cutworm Nephelodes emmedonia violans Hbn. in 40 years is reported from Connecticut. The usual spring reports on cutworms have been received from many parts of the country. This damage was so severe in parts of Hidalgo County, Tex., that replanting of cotton was made necessary. Similar damage is reported from the Phoenix area of Arizona.

Scattered outbreaks of army cutworm and the armyworm are reported from Wyoming, Utah, Texas, Oklahoma, and Idaho. During the last week in the month the fall armyworm appeared in parts of Georgia and Mississippi.

Serious damage by the green June beetle larvae to tobacco seedbeds is reported from Pennsylvania, Ohio, and Tennessee.

The first white-fringed beetle of the season was reported on May 13 in New Orleans.

The first codling moth adults of the season were observed in New York on May 8, in Pennsylvania on May 5, in Delaware on April 29, in Georgia on April 28, in southern Ohio on May 5, in Indiana on April 29,

and in Kansas on May 5. The peak of emergence was reached in New York on May 15 and in Delaware between May 13 and 19. In the East Central States emergence has been rather heavy and considerable infestation of apples by larvae is being reported.

Heavy defoliations of both wild plants and apples by the eastern tent caterpillar is reported along the Atlantic seaboard from Connecticut to Maryland and westward to Ohio, Illinois, and Tennessee.

The fruit leaf roller is reported as abundant in the Hudson Valley of New York, and in western Illinois and central Missouri.

Fruit aphids generally below normal throughout the East and East Central States.

European red mite hatched earlier than usual throughout New England and the Middle Atlantic States and westward to Michigan.

The peak of emergence of plum curculio from dropped fruit occurred on May 10, 11 days earlier than last year. The midseason variety of peaches in the Fort Valley area will probably be subject to a second-brood attack. This insect is being reported in rather large numbers from New England and the Middle Atlantic States.

More California citrus groves are seriously infested by citricola scale than in several seasons. Rather heavy infestations of citrus rust mite were reported from Florida, Texas, and California.

Vegetable weevil was damaging tomatoes and spinach plants in the Uvalde area during the latter part of the month. This is the first report from this section. It is also seriously damaging truck crops in Harris and Brazos Counties. Rather general damage was found throughout a large part of Mississippi.

Severe damage to corn by the spotted cucumber beetle was reported from Mississippi. This insect was also reported as attacking corn in Georgia and seedling melons and corn in Utah.

Severe infestation of potatoes by the Colorado potato beetle is reported along the Atlantic seaboard from Virginia to Florida.

Corn ear worm was damaging tomatoes during the first week in the month in Texas. Eggs were fairly abundant in South Carolina by the middle of the month and the adults were observed in Virginia during the last week of May.

Mexican bean beetles appeared during the first week in the month in Georgia and about the middle of the month in Ohio.

Heavy infestation of pea aphid on alfalfa and vetch appeared in the Norfolk area during the early part of May. Early peas, however, were early enough to escape injury. This insect is reported quite generally

from the Atlantic and East Central States. Very heavy infestations are reported from Wisconsin and Missouri. They were also damaging alfalfa in the Southwest and the Great Basin.

Boll weevil survival is reported as considerably higher than usual throughout the entire boll weevil area. In south-central and north-central Texas higher populations passed the winter successfully than has been the case in the last 16 years.

Considerable damage to young cotton plants by flea beetles is reported from Georgia.

The beet armyworm is reported as severely damaging cotton in Arizona.

A larva of the cotton leaf worm was collected from cotton 25 miles southwest of Matamoros, Mexico, on May 9. First report on this insect for the season.

Heavy infestations of cankerworm with spotted outbreaks where complete defoliation occurred were reported from the New England States and Middle Atlantic States westward to Minnesota and the Dakotas and southward to Tennessee and Oklahoma.

Elm leaf beetle was generally annoying in households in New England and the Middle Atlantic States. Egg laying was observed in Maryland on April 24 and in New Jersey on May 7.

Unusually heavy infestation of ornamental junipers by the juniper webworm was reported from Pennsylvania, Maryland, and Delaware.

GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

Arizona. B. M. Gaddis and assistants (April 21-26): Hatching of Melanoplus mexicanus Sauss., the only grasshopper of major importance in crop areas of Maricopa and Yuma Counties, is practically complete. Infestations in the Roll-Wellton district of Yuma County are general and severe in some fields; however, in other sections of the county only scattered localized infestations exist. Very few fields in Maricopa County have threatening-to-severe infestations. (April 27-May 3): Fifteen percent of M. mexicanus have reached the adult stage, while in Maricopa County the range in nymphal development is from first to fifth instar. Grasshopper damage in the afore-mentioned counties is becoming more evident; in several fields of the Roll-Wellton district, damage to alfalfa ranged from 5 to 100 percent. (May 4-10): Maricopa County grasshopper infestations are somewhat lighter than was expected but are much lighter than in 1940. A few first and second instars of M. differentialis Thos. have been observed during the past week. The range grasshopper (Trimerotropis pallidipennis Burm.) has moved into the vicinity of crops in this county but no damage has resulted. (May 11-17): Warm and dry weather in the southern portion of the State was favorable to rapid development of grasshopper eggs and nymphs during the week. M. mexicanus now comprises approximately 75 percent of the species present and M. differentialis from 15 to 20 percent. Most M. mexicanus are in the adult stage, while M. differentialis ranges from first to third instar.

Colorado.<sup>1/</sup> (May 4-10): The hatch of M. mexicanus and Aeoloplus turnbullii Thos. was 50 percent complete in southeastern Colorado. Populations ranged from 5 to 50 per square yard in fields and from 10 to 150 per square yard on margins. (May 11-17): Weather conditions throughout eastern Colorado were highly favorable for egg and nymphal development. The dominant species in the irrigated areas are M. bivittatus Say, M. differentialis, M. mexicanus, and A. turnbullii, in the order named. In the dry-land farming areas, the species in order of importance at present are A. turnbullii, M. bivittatus, M. mexicanus, and M. packardii Scudd. The hatch is 65 percent complete in southeastern Colorado and 15 percent complete in the northeastern section of the State. M. bivittatus and M. differentialis comprise 60 percent of the grasshoppers in the irrigated-farming areas. Nymphs have not migrated into crops in large numbers, owing to the abundant vegetation available along field margins.

New Mexico. (April 21-26): Several first-instar M. mexicanus and one second-instar M. bivittatus were observed in an alfalfa field. (May 4-10): M. bivittatus was beginning to hatch in favorable habitats along the Rio Grande Valley. (May 11-17): Hatching of M. bivittatus

<sup>1/</sup> Where no name is given after the State the report is by B. M. Gaddis and assistants.

is about 15 percent complete in the counties of central New Mexico. The hatch of M. mexicanus was estimated at 5 percent complete by May 16.

Texas. (April 21-26): A few newly hatched nymphs were reported in Hartley, Hutchinson, Hansford, Ochiltree, and Lipscomb Counties. Populations along margins of wheatfields in Lipscomb County ranges as high as 10 per square yard with 1 per square yard in most fields. The majority of nymphs observed were Aulocaro elliotti Thos. and A. turnbullii, with a few M. mexicanus. (May 4-10): First-instar nymphs of A. turnbullii and M. mexicanus were observed in the northern part of the Panhandle, the former being the dominant species. Populations were low except in Hansford, Ochiltree, and Sherman Counties, where concentrations along fence rows adjacent to wheat numbered up to 15 per square yard. (May 11-17): Populations are composed of 50 percent A. turnbullii and 30 percent M. mexicanus, and nymphal concentrations along wheatfield margins number 20 per square yard.

Oklahoma. (May 4-10): Scattered rains and continued cool weather throughout the Oklahoma Panhandle are causing a prolonged hatch. Populations ranged as high as 20 per square yard in part of Harper County and up to 6 per square yard in Beaver and Texas Counties. (May 11-17): A rapid increase occurred in the hatching of grasshoppers throughout the northwestern Oklahoma Panhandle. The hatch is now approximately 25 percent complete. A. turnbullii, the dominant species, is mainly in the second instar, with a few in the third. Most M. mexicanus are in the first instar. Populations as high as 50 per square yard, mainly A. turnbullii, were observed along margins of alfalfa fields in Harper County; the numbers present in Beaver, Cimarron, and Texas Counties are considerably lower.

Kansas. (April 27-May 3): Cool and rainy weather during the week retarded development of eggs. Considerable hatching, however, took place in the southwestern part of the State. In the more sandy areas as many as 15 to 20 nymphs per square yard were observed in idle fields and as high as 50 or more nymphs per square yard in margins. The hatch is estimated to be 5 percent complete, and 75 percent of the A. turnbullii are estimated to have hatched. A very small percentage of M. mexicanus have hatched, inasmuch as the pods of this species are generally buried more deeply; less than 10 percent of the nymphs observed were M. mexicanus. Practically all nymphs are in the first instar and are active and feeding on young Russian-thistle. (May 4-10): Weather conditions during the last week have been favorable for grasshopper development. Crop conditions are excellent and marginal vegetation is luxuriant, affording ample food and cover for grasshopper populations. In the southwestern part of the State A. turnbullii was 75 percent hatched and M. mexicanus 30 percent hatched, with both species being 75 percent first-instar, 20 percent second-instar and the remaining few, third-instar nymphs. M. mexicanus is the dominant species, followed closely by A. turnbullii. Populations range from 5 to 50 per square yard in the fields and from 10 to 150 per square yard on margins with abandoned land and depleted range being the chief sources of in-

festation. In northwestern Kansas A. turnbullii is 20 percent hatched and M. mexicanus 10 percent hatched. Nymphs are 95 percent in the first instar. (May 11-17): Throughout western Kansas, warm and dry weather during the week has been highly favorable to development of eggs and nymphs. In the southwestern corner of the State, in the area immediately south of the Arkansas River and extending from the western border of the State to Dodge City, approximately 400,000 acres have spotted infestations comprised of M. mexicanus and A. turnbullii. This sand-hill area has little vegetation except for sagebrush and Russian-thistle. The grasshopper hatch in the area is complete with the nymphs predominately in the second and third instars. Populations range as high as 75 per square yard; the area may become a reservoir from which light flights will develop. The hatch in the northwestern quarter of the State was about 30 percent complete, with A. turnbullii comprising 60 percent and M. mexicanus 30 percent of the grasshopper population. Nymphs are 60 percent first instar, 30 percent second instar, and 5 percent third instar. The heaviest infestations occur in small-grain stubble and in crop margins, the marginal populations ranging as high as 500 per square yard and averaging about 100 per square yard. Infestations in stubble average about 30 per square yard. Winter wheat which suffered heavy marginal destruction by second-generation M. mexicanus last fall was found occasionally infested along margins, with populations ranging as high as 300 per square yard. Populations of A. turnbullii, ranging as high as 500 per square yard along wheat margins, are denuding thistle and pigweed plants but to date have caused no damage to wheat.

Nebraska. (April 27-May 3): First-instar M. mexicanus nymphs were observed on April 30 in Keith, Chase, and Dundy Counties and on May 2 in Webster County, in southwestern Nebraska. (May 4-10): The hatch was less than 5 percent for western and central Nebraska, with M. mexicanus and A. turnbullii being the species involved. Populations ranged up to 10 per square yard. (May 11-17): Warm, dry weather during the week favored grasshopper development throughout all sections of the State. In western Nebraska the hatch by May 17 was estimated to be 75 percent complete, with A. turnbullii comprising 65 percent and M. mexicanus 25 percent of the species present. Approximately 65 percent of the above species were first instar, 25 percent were second instar, and 5 percent third instar. Populations along field margins ranged from 10 to 225 in counties just north of the Kansas line and from less than 1 to 12 in the northwestern counties. Grasshopper hatching in central and eastern Nebraska was well under way; the hatch of M. bivittatus was estimated about 50 percent complete, that of M. differentialis 15 percent, and that of M. packardii 5 percent. M. bivittatus were 50 percent first instar, 40 percent second, and 10 percent third. In the south-central portion of the State, hatching of all species is approximately 50 percent complete, with third-instar M. bivittatus and M. mexicanus and second-instar A. turnbullii present. Populations in central Nebraska range as high as 500 per square yard along field margins and from 1 to 30 per square yard in fields. In the Nebraska Panhandle, populations range from 5 to 135 per square yard in margins and as high as 10 per square yard in

fields. Abundant vegetation along field margins has held the grasshoppers and very little migration into fields has occurred.

D. B. Whelan (May 7): M. turnbullii and M. mexicanus were observed hatching in Dundy, Hitchcock, Red Willow, Furnas, Harlan, and Franklin Counties in the southern part of the State on May 7.

Iowa. B. M. Gaddis and assistants (April 27-May 3): M. mexicanus reported hatching on April 27, and M. bivittatus on May 3 in the vicinity of Ames, Story County. (May 4-10): M. mexicanus and M. bivittatus reported hatching in considerable numbers in the vicinity of Ames on May 8.

C. J. Drake (May 29): County agents are reporting grasshoppers, the two-striped and lesser migratory, as present in considerable numbers in all of the counties in the western part of the State, bordering the Missouri River. Heaviest infestation is in the northwestern part of the State. M. differentialis is hatching. Weather conditions have not taken a very large toll of newly hatched individuals.

Michigan. R. Hutson (May 21): M. mexicanus was hatching at Bridgman on May 7, and first and second instars of M. mexicanus, Cannula pellucida Scudd., and Ageneotettix deorum Scudd. were observed in Clare, Montcalm, Isabella, Wexford, and Osceola Counties in the northern half of the State on May 13 and 14. Very few second-instar nymphs were observed.

Minnesota. A. G. Ruzzles (May 19): Grasshoppers hatching generally in the northwestern part of the State, where a 90-percent hatch has occurred.

North Dakota. B. M. Gaddis and assistants (May 4-10): M. bivittatus and M. mexicanus began hatching in favorable situations in eastern and south-central North Dakota during the week. (May 11-17): Cool weather throughout eastern North Dakota retarded hatching during the week; however, the hatch is about 25 percent complete, with populations ranging from an occasional nymph to 15 per square yard along field margins.

F. G. Butcher (May 23): Eggs are hatching generally throughout infested areas with most acute developments appearing in the northeastern counties.

South Dakota. B. M. Gaddis and assistants (May 4-10): The hatch ranges from less than 5 percent in the northeastern part of the State to 20 percent in the east-central portion. M. mexicanus, M. bivittatus, and M. confusus Scudd. are the predominant species. Populations on margins range from 5 to 35 per square yard. (May 11-17): A rapid hatching of M. bivittatus and M. mexicanus occurred in the State during the week. Weather conditions were highly favorable for egg and nymphal development. In south-central South Dakota, the hatch of M. bivittatus and M. mexicanus is between 50 and 75 percent complete. Most of the grasshoppers are in the second instar, with marginal populations of 100 to 125 per square yard. No appreciable hatch of M.

differentialis has occurred. In the extreme southeastern part of the State, hatching is about 25 percent complete. Approximately 50 percent of M. mexicanus and M. bivittatus have hatched in the northeastern section of the State; M. differentialis is beginning to hatch.

H. C. Severin and G. I. Gilbertson (May 23): First large hatch of grasshoppers, about a 30-percent hatch, occurred on May 10 and 11. M. differentialis eggs are just beginning to hatch.

Montana. B. M. Gaddis and assistants (May 4-10): First hatching of M. mexicanus and M. bivittatus was observed in Big Horn, Rosebud, Treasure, and Yellowstone Counties, in south-central Montana, during the past week. (May 11-17): Hatching of M. mexicanus, M. bivittatus, and M. differentialis is reported in south-central Montana; in some areas of Yellowstone County an estimated 50-percent hatch has occurred. M. bivittatus is the dominant species, with most of them in the second instar. Light hatches are reported in north-central Montana and a slight amount of damage to wheat crops is reported in the vicinities of Shelby and Dunkirk, in Toole County.

H. B. Mills (May 20): Hatching reported under way in Cascade, Chouteau, Garfield, Petroleum, Hill, Pondera, Toole, Valley, and Yellowstone Counties. Largest hatch reported from Pondera County in the northwestern part of the State.

Wyoming. B. M. Gaddis and assistants (May 11-17): Approximately 40 percent of the eggs of M. bivittatus have hatched in Washakie and Big Horn Counties in the north-central part of the State.

Utah. (April 27-May 3): First-instar grasshoppers are reported present in small numbers in the following counties: Iron, Beaver, Millard, Juab, in the western part of the State and Utah in the central part of the State. A light and general hatch is now occurring in many localities. Populations up to 10 per square yard can be found along weedy field margins and fence rows on the drier bench lands of Utah and Juab Counties. A small portion of the nymphs have reached the second instar. (May 4-10): The beginning of a general grasshopper hatch was observed in southeastern and south-central Utah during the week. Populations of 5 per square yard were found in alfalfa fields in Grand, Emery, and San Juan Counties. M. mexicanus and M. bivittatus were the predominant species. Slight leaf damage has occurred along margins of alfalfa. (May 11-17): Weather conditions were generally unfavorable for grasshopper development in the central and northern parts of the State last week. On benchlands and foothill areas of Salt Lake, Davis, Weber, Box Elder, and Cache Counties, first instar M. mexicanus nymphs are present with populations ranging from 3 to 6 per square yard. There is no evidence of crop damage.

G. F. Knowlton and assistants (May, 1941): First-instar grasshoppers were found in Iron, Beaver, Millard, Juab, and Utah Counties, in the western part of the State, on May 3. By May 10 hatching over most of the State was general but light, nymphs being mostly in the first and

second instars. Hatching was most common on field and road margins and south slopes. Only injury observed was on May 10 at Elgin, on alfalfa-field margins. On May 22 a heavy hatch was occurring on some eggbeds near Minersville, as many as 300 nymphs per square yard being found. Among the species are M. differentialis, Aulocara elliotti Thos., and Hippiscus corallipes Hald. Parasitization by bee fly is marked, sometimes 8 per square foot, attacking unhatched eggs of Cannula pellucida Scudd. west of Ephraim, in central Utah.

Idaho. B. M. Gaddis and assistants (April 21-26): M. mexicanus and M. femur-rubrum Deg. are reported as beginning to hatch in the irrigated sections of the eastern part of the State. Second- and third-instar nymphs of Aulocara sp. were observed. (May 4-10): Egg concentrations of C. pellucida occur in the Ola section of Gem County, and in the Hill City area of Elmore County in the western part of the State.

Nevada. B. M. Gaddis and assistants (May 11-17): M. occidentalis Thos. was reported to be hatching in Smoky Valley, in the southern portion of Lander County, in the central part of the State, on April 28, which was 2 to 3 weeks later than in 1940 and from 4 to 5 weeks later than in 1939. First- and second-instar nymphs of M. occidentalis were observed in the Dunphy area of northern Eureka County on May 6. Cannula pellucida was hatching in Douglas County, southwestern Nevada, on May 14.

California. S. Lockwood (May 1): Grasshopper hatch has been reported as irregular from El Centro, Imperial County, in the southeastern part of the State. M. mexicanus now ranges from third-instar nymphs down to first instar, with the hatch incomplete. Infestations are considerably lighter than a year ago. M. mexicanus hatching is incomplete in Riverside County, and infestation is spotted and considerably lighter than last year. A severe infestation of M. devastator Scudd. and Oedaleonotus onigma Scudd. has occurred in the area from Arrowhead across north to Verdemont in the Cajon Pass area; thence west around the foothills to Rialto, North Fontana, and close to Colton, all in San Bernardino County in the southern part of the State. Grasshoppers are confined to brush and range land. In the low elevations they run more than 100 nymphs to 10 sweeps of an insect net, even on an overcast day. Infestation is heavier than last year. M. devastator nymphs are first and second instars with an occasional third. O. onigma ranges from second to fourth. Range grasses are relatively high, which will hold the grasshoppers in place for some time. Inspections in Orange County show that M. devastator and O. onigma are present in the first and second instars on two ranches. These are relatively large areas and will need considerable attention. Inspections made last week in Los Angeles County show that the hatch is not far enough along to give a true picture. In Kern County, M. devastator nymphs have been reduced from one-half to one-third the number present last year. General infestation of lighter numbers than for the last 2 years occur from a ranch east of Edison, south along the foothills for approximately 30 miles past Comanchi Point.

S. Lockwood (May 15): Farther north foothill range lands in Colusa and Yolo Counties are now infested, with M. devastator ranging from

first to third instar, and accounting for approximately 25 percent of the infestation. *O. enigma*, in first to fourth instars, ranges from 5 to about 50 per square yard.

**MORMON CRICKET (Anabrus simplex Hald.)**

South Dakota. B. M. Gaddis and assistants (April 27-May 3): Second-instar Mormon crickets were reported at the Lower Brule Indian Agency in Lyman County in the south-central part of the State on May 1. Light populations of second- and third-instar crickets are reported in range-land areas in southeastern McJette and northeastern Todd Counties. (May 4-10): Small numbers of Mormon cricket nymphs have been found in Hand, Spink, Faulk, Hyde, Walworth, and Campbell Counties, of central South Dakota. Considerable numbers of third- and fourth-instar nymphs were reported in Lyman County. (May 11-17): Fifth-instar crickets are reported present in Lyman County. Populations range from 8 per square yard in Jones County to 150 per square yard in Lyman County. Between Reliance and Fresho and on the Lower Brule Indian Agency, migrations are occurring.

H. C. Severin and G. I. Gilbertson (May 23): Mormon crickets began to hatch in the latter part of April and are now in the fourth or fifth instars. Definite banding is taking place. Considerable damage done to gardens in the Kennebec area.

Montana. B. M. Gaddis and assistants (May 4-10): Mormon crickets in the Black Butte, Geraldine, and Highwood Mountain areas of Chouteau County and in the Dover area of Judith Basin County in the central part of the State are in first to third instars. In Big Horn County in the southern part of the State migrations of third- and fourth-instar crickets have occurred in the Sioux Pass area, while bands of first-, second-, and third-instar crickets in that area have migrated very little. Cool weather has retarded development and migration of crickets in Yellowstone County. A check of the infested area of Meagher County showed crickets just beginning to hatch on May 9, with only first-instar nymphs found. (May 11-17): Nymphs are reported in the third, fourth, and fifth instars in Yellowstone County and migrations are becoming noticeable. A heavy infestation is present on the Beaverhead National Forest, Beaverhead County, in the southwestern part of the State.

H. B. Mills (May 20): Mormon crickets are reported hatching in Bighorn, Cascade, Chouteau, Meagher, Sanders, Yellowstone, and Beaverhead Counties in the western half of the State. In the southern area some have reached the fourth instar.

Wyoming. B. M. Gaddis and assistants (April 21-26): Mormon crickets in Sheridan County, in the north-central part of the State, are in the second and third instars, with most of them in the second. First-instar crickets are reported in Crook County, in the northeastern part of the State. Crickets are still hatching at the lower elevations in Hot Springs County, in the northwestern part of the State.

Idaho. (April 27-May 3): Infestations in Clark, Fremont, and Jefferson Counties, in eastern Idaho, are heavier than anticipated. The range of development is from first to third instar in Clark County and second to third instar in Jefferson and Fremont Counties at the lower elevations, while at the higher altitudes of Clark and Fremont Counties only 1 to 3 percent of the crickets have hatched; migrations are occurring in most areas. The range of development in the western counties of the State is from first to sixth instar with 40 percent in the fourth and 30 percent in the third. (May 4-10): Cricket infestation in western Idaho is confined to Washington and Elmore Counties, the infestation in Washington County being greater than was anticipated. Limited migrations are occurring in the Mayfield area of Elmore County. Crickets range from second to sixth instars, with 60 percent in the fourth. Mormon crickets in Jefferson, Bingham, Fremont, and Clark Counties, in eastern Idaho, are in the first to fourth instars, and hatching is not completed in the higher altitudes of Clark and Fremont Counties. Migrations have occurred in the lower altitudes of Clark and Fremont Counties and throughout Jefferson County.

Utah. G. F. Knowlton and H. F. Thornley (May 17): First- to fifth-instar Mormon crickets are now occurring in Tooele, Juab, and Utah Counties hatching areas, with some eggs still unhatched at higher elevations.

Nevada. B. M. Gaddis and assistants (April 27-May 3): Most of the crickets in Humboldt County the week ended April 26 were in first and second instars. In the Smith Creek area of Elko County, northeastern Nevada, the week closing May 3, most were in the third instar, with a few in the second and fourth.

Washington. B. M. Gaddis and assistants (April 27-May 3): Cricket populations in Franklin County in the southeastern part of the State range from 5 to 100 per square yard; 40 percent of the crickets are adult, 50 percent sixth and seventh instars, and 10 percent second to fifth instars. Migrations are heavy and some bands have moved into wheat-fields, causing slight damage. Crickets in the Goodnoe Hills area of Klickitat County range from fourth to seventh instars; infestations are spotted throughout the area. In Yakima County migrations of first to seventh instar nymphs are occurring in the Toppenish Mountains. (May 11-17): About 95 percent in Franklin County are in the adult stage. Very little migration has occurred during the last week, owing to the cool, rainy weather. Large numbers of sea gulls have appeared in the infested area of the county and are destroying some crickets.

Oregon. (April 27-May 3): Mormon crickets at the lower elevations of the Warm Springs area in Wasco and Jefferson Counties are 40 percent sixth instar, 50 percent seventh instar, and 10 percent adult. In the higher areas the percentages are equally divided among the fourth, fifth, sixth, and seventh stages. Large bands are reported on the high plateaus of the Mutton Mountains. No appreciable crop damage has occurred; however, range damage is reported in all areas. (May 4-10): Migrations were retarded the forepart of the week on account of rain. On the Warm Springs Indian Reservation, crickets are moving westward onto uninfested lands on the north side

of the Warm Springs River and in a southerly direction on the south side of the river. General migrations on the east side of the Deschutes River have been in an easterly direction. From 200,000 to 250,000 acres are infested and 50 percent of this area is classed as moderately to heavily infested. In the area south of the Warm Springs River, Mormon crickets are just entering the adult stage. (May 11-17): Crickets in Wasco and Jefferson Counties are 95 percent adult, with the remaining 5 percent in the sixth and seventh instars. There was little migration of cricket bands during the week, owing to the cool weather which prevailed in this area of the State.

COULEE CRICKET (Perenabrus scabricollis Thos.)

Oregon. B. M. Gaddis and assistants (April 27-May 3): Large bands are reported in Wasco County in the northern part of the State. (May 11-17): Crickets are ovipositing and scattering to new localities infesting an additional 2,000 acres in the last 10 days. Populations on the east side of the Deschutes River in those areas newly infested is less than 3 to the square yard. On the east side of the Deschutes River, crickets have damaged the foliage of cheat grass from 20 to 25 percent and the seed has been reduced from 60 to 70 percent. The damage is not general over the entire area.

FIELD CRICKET (Gryllus assimilis F.)

Nebraska. H. D. Tate (May 17): The field cricket was reported from Seward County on April 14.

Utah. G. F. Knowlton (May 17): Moderately abundant at Taylorsville, in Salt Lake County, and at Perry, in Box Elder County.

Nevada. G. G. Schweis (May 20): Outbreak reported on range land in Washoe County, in the northwestern part of the State, during the month. Exceedingly numerous.

CUTWORMS (Phalaenidae)

Maine. J. Hawkins (April 23): Larvae of several species, Agrotis bicarnea Guen. predominating, present at Monmouth in grass crops. (May 7): Many last-instar larvae and a few now in the pupal stage. (May 20): Moths of Agrotis ypsilon Rott. have been flying at Orono since May 8. More abundant than usual.

Connecticut. J. P. Johnson (May 22): Larvae of Nephelodes omicronia violans Guen. were found along 22 miles of the Minitt Highway in the towns of Greenwich, Stamford, and New Canaan, in the southwestern part of the State. Feeding was from light to severe on over 50 acres of turf, and green grass was all eaten, leaving large brown areas. First outbreak in Connecticut known in over 40 years.

New York. N. Y. State Coll. Agr. News Letter (May): Cutworms are very plentiful in Rockland County where they are causing considerable damage to cabbage plots and tomatoes. Also doing a little damage in Niagara, Oneida, and Onondaga Counties.

Tennessee. G. M. Bentley (May 23): Cutworms have been noticeable in 95 counties, causing trouble to garden plants and field corn.

L. B. Scott (May 19): Unusually abundant in north-central part of State. Severely damaged corn and numerous reports have been received of damage to tomatoes, tobacco, and peppers.

Ohio. T. H. Parks (May 23): More than usual number of complaints received of cutworm damage to corn, onions, tomatoes, and beans in central Ohio.

Indiana. J. J. Davis (May 27): Damage to tomatoes and corn reported from various parts of the State during the last 2 weeks.

Kentucky. W. A. Price (May 26): Cutworms did considerable damage to corn in Graves, Carlisle, Davis, and McLean Counties.

Michigan. R. Hutson (May 21): Abagrotis alternata Grote has been numerous in the Fruit Belt north of Grand Rapids, occurring at Muskegon, Shelby, Ludington, Benzonia, and Traverse City. Paragrotis scandens Riley has been very numerous in many places in the southern end of the Fruit Belt, particularly about Saint Joseph, Benton Harbor, South Haven, Niles, and Paw Paw in the southwestern part of the State.

Minnesota. A. G. Ruggles and assistants (May 19): Sidemia devastator Braco, A. ypsilon, and the variegated cutworm, Peridroma margaritosa Haw., are common.

Kansas. B. M. Gaddis (April 27-May 3): Agrotis orthogonia Morr. reported causing some damage to spring grain.

H. R. Bryson (May 29): Cutworms in general have been more abundant over the State than for several years. The variegated cutworm may be found easily and has caused injury in gardens. The pale western cutworm, Agrotis orthogonia, was quite abundant in the western part of the State and was present in considerable numbers in seven counties in the southwest corner.

Texas. C. O. Gingrass (May 5): Cutworm damage was severe in sections of Hidalgo County, early cotton plantings being destroyed in many places.

Arizona. C. D. Lebert (May 20): Cutworms have been abundant since May 1 in Phoenix and the surrounding area. Prodenia sp. (probably ornithogalli Guen.) is found in most of the cotton acreages. A. ypsilon and P. margaritosa were common on ornamentals, and Oncocnenis punctilinea Hampson is also present.

ARMY CUTWORM (Chorizagrotis auxiliaris Grote)

Nebraska. B. M. Gaddis and assistants (April 21-26): Crop damage has apparently been light in all infested counties. Excellent growing conditions for crops have undoubtedly played an important part in holding down the amount of damage. One field examined in Banner County showed border damage extending 5 or 6 feet into the margin of the field, with from 5 to 11 cutworms present per foot of drill row. Other fields examined showed only slight marginal damage. Approximately 20 percent of the larvae were in the last instar and ready to pupate.

Oklahoma. (May 11-17): Serious outbreaks of army cutworms were reported in wheat, oats, barley, and rye in Harmon, Jackson, Grady, Tillman, Cotton, and Kiowa Counties in the southwestern part of the State. Worms ranged from 30 to 35 per square foot in some areas but no extensive baiting has yet been done.

Colorado. (April 27-May 3): Minor crop damage is reported to be taking place in new seedlings of alfalfa in Boulder, Adams, Jefferson, Weld, and Larimer Counties in the north-central part of the State; however, cutworms are not present in these areas in sufficient numbers to cause extensive damage. (May 11-17): Army cutworms were reported doing considerable damage to corn in Logan, Sedgwick, Phillips, and Yuma Counties, in northeastern Colorado. Alfalfa, spring grains, and truck crops also are being damaged slightly.

Montana. H. B. Mills (May 20): The army cutworm is still doing a little damage in Phillips County, in the northeastern part of the State, and in Toole County, in the north-central part.

B. M. Gaddis and assistants (May 4-10): From 2 to 10 army cutworms per square foot have been found in various regions of south-central Montana. Some damage has been reported to young alfalfa, winter wheat, and sugar beets.

Wyoming. B. T. Snipes (May 21): Army cutworm outbreaks reported covering much of the State. Damage ranges from light in range land and alfalfa to heavy in wheat, some fields of wheat in Johnson County showing 100-percent loss.

Utah. G. F. Knowlton and assistants (April 30): Army cutworm injury has been severe in alfalfa and wheatfields in Uinta, Beaver, Carbon, Grand, San Juan, Sevier, Sanpete, and Morgan Counties. Pupation started in Carbon County on May 5.

Idaho. B. M. Gaddis and assistants (April 21-26): An area of some 8,000 acres in the dry-farm section of Power County is infested. (May 4-10): Four hundred acres of wheat and alfalfa are infested in Jefferson County and approximately 25 percent of the crops in that area have been destroyed.

F. V. Owen (May 13): Specimens were found in an alfalfa field at Lesley, Butte County. (Det. by C. Heinrich.)

FALL ARMYWORM (Laphygma frugiperda A. & S.)

Georgia. O. I. Snapp (May 20): Abundant locally at points in South Georgia and attacking cotton, corn, tobacco, peanuts, cabbage, and other vegetables and grasses.

Mississippi. C. Lyle (May 24): First report of injury was received from T. F. McGhee on May 13 from Harrison County. Larvae were feeding in the bud of young corn.

Mexico. L. C. Fife and F. F. Bibby (May 29): At Matamoros, Mexico, opposite Brownsville, Tex., on April 23, 1941, insects on corn. (Det. by C. Heinrich.)

BEET WEBWORM (Loxostege sticticalis L.)

Minnesota. A. G. Ruggles and assistants (May 1): Large number in silken cocoons on top of the ground, as well as in the soil, in Baudette Township, Lake of the Woods County, in the northeastern part of the State. Large percentage of larvae are alive.

PAINTED LADY (Vanessa cardui L.)

Arizona. C. D. Lebert (May 15): Heavy migrations of caterpillars from Malva and other weeds into yards in the Phoenix area. Severe defoliation to some ornamentals resulted in many instances, chrysanthemums, lantana, and petunias suffering most. Larvae, crawling into and all over houses, are very annoying.

Utah. G. F. Knowlton and assistants (May): Butterflies were first noticed in Washington and Iron Counties in the southwestern corner of the State on April 24, when they were flying in a north to north-easterly direction. On April 29 they were observed in Uinta County, on the 30th in Tooele County, and by May 10 covered all of the counties in the northern half of the State, except Rich, Morgan, and Daggett. At higher altitudes and through some mountain passes, small numbers were still migrating toward the north on May 21, but most seem settled.

WIREWORMS (Elateridae)

New York. N. Y. State Coll. Agr. News Letter (May): Limonius agonus Say was reported as causing injury to corn, cabbage, cauliflower, and perhaps lettuce plants on Staten Island, and in Onondaga, Oneida, and Erie Counties.

Alabama. J. M. Robinson (May 23): Wireworms were found in peanuts at Elba in the southeastern part of the State.

Iowa. H. E. Jaques (May): Wireworms reported as light to moderately abundant in scattered counties throughout the State.

North Dakota. F. Gray Butcher (May 23): Wireworms have been responsible for severe spotted damage to cereal crops in Barnes County, in the southeastern part of the State, during the last 10 days.

South Dakota. H. C. Severin and G. I. Gilbertson (May 23): Wireworms have caused considerable trouble in the eastern and central sections of the State.

Wyoming. B. T. Snipes (May 20): Wireworms are causing small spot damage to wheat in Sheridan and Big Horn Counties.

Utah. G. F. Knowlton (May 14): Wireworms were found infesting sugar beet and tomato land on a farm west of Ogden, and on a farm at Benson, in Cache County.

Washington. E. W. Jones (May 7): Larvae of L. californicus Mann. were found feeding on sugar beets, and larvae of L. canus Lec. were feeding on cabbage plants and seed onions at Walla Walla.

Oregon. R. L. Post (May 20): Larvae attacked strawberry roots at Stayton, in the northwestern part of the State, in Marion County.

#### MAY BEETLES (Phyllophaga spp.)

Mississippi. C. Lyle and assistants (May 24): May beetles sent in from Clay County on April 26. Reported by N. L. Douglass as feeding on pecan buds in Grenada County.

Indiana. P. Luginbill (May 7): May beetle flights started somewhat earlier than usual. Some damage to tree foliage has occurred at Fillmore in the western part of the State. Usually occurs last week in May.

Illinois. A. F. Satterthwait (May 24): P. implicita Horn began to appear in Japanese beetle traps at Urbana-Champaign on May 5, and P. futilis Lec. on May 20.

Kentucky. W. A. Price (May 26): P. hirticula Knoch caused some striping of pin and bur oaks in the Inner Bluegrass Region early in May.

Wisconsin. T. R. Chamberlin (April): June beetles emerged in large numbers before May 1, earlier than any year since 1934. First emergence recorded was April 25. The streets, sidewalks, and gutters at Ripon, in the eastern part of the State, were said to be covered with thousands of beetles. (May 26): Large flights of beetles reported occurring in various localities. A terrific flight of P. tristis F. was reported at Baldwin about May 15, and a very large flight was reported from Viroqua at the same time. Large flights were also reported from Beaver Dam and Sturgeon Bay on May 19 and 20. At Sturgeon Bay

the sidewalks were covered with dead beetles which had been attracted to the lights on previous nights. In places they were more than one layer thick. Beetles have not been so abundant in southwestern Wisconsin where counts were made of beetles taken from host plants at Lamont, Linden, Gays Mills, Dane, Leeds, and Poynette. They appear much less numerous than in the previous A brood, that of 1938.

Minnesota. A. G. Ruggles and assistants (May): June bugs, first reported from Austin on May 10, are abundant in the southeastern part of the State.

Iowa. H. E. Jaques (May): Reported as light to moderately abundant in scattered counties throughout the State.

Missouri. A. C. Burrill (April 21-May 4): First June bug was noted at Jefferson City about April 21. Heavy noisy swarms of a middle-sized species arrived on the evenings of April 26, 27, and 28.

L. Haseman (May 8): Very heavy flight of two or three species of June beetles occurring and they have done considerable damage, especially to the more tender new growth on fruit, forest, and shade trees in central Missouri. Reports indicate infestation general over the State.

Nebraska. H. D. Tate (May 17): Adults of P. crassissima Blanch., P. hirticula Knoch, and P. implicita Horn, were collected at Lincoln, in Lancaster County, during the week of May 11 to 17.

#### GREEN JUNE BEETLE (Cotinis nitida L.)

Pennsylvania. B. F. Coon. (May 3): Causing serious injury to young tobacco seedlings in seedbed about 11 miles southwest of Lancaster. Grubs appear nearly mature.

Ohio. T. H. Parks (May 23): Larvae reported destroying tobacco in seedbeds in Brown County, near Cincinnati, on May 10.

Tennessee. L. B. Scott (May 19): Larvae severely damaged tobacco plant beds in north-central part of State.

#### JAPANESE BEETLE (Popillia japonica Newm.)

Connecticut. J. P. Johnson (May 22): Lawns and turf damaged by grubs during April and May. The fairways of one golf course in Greenwich were severely damaged, grubs numbering 150 per the square foot.

New York. E. P. Felt (May 23): Pupae were reported from Rockland County.

Pennsylvania. B. F. Coon (May 24): Two adults were collected on plantain at Lancaster today for the first emergence record.

ORIENTAL BEETLE (Anomala orientalis Wtrh.)

Connecticut. J. P. Johnson (May 22): Lawns in localized areas of New Haven and West Haven have been severely damaged by grubs, which have been feeding since the first week in April.

A SCARABAEID (Anomala undulata Melsh.)

North Carolina. O. I. Snapp (May 17): Reported as very destructive to young peaches on a farm in the upper end of Stanly County. Almost all of the flesh had been eaten from the small green peach submitted from Albemarle.

ROSE CHAFER (Macrodactylus subspinosus F.)

Kentucky. W. A. Price (May 26): Very abundant and destructive on peaches in particular and vegetable crops in general in the south-central part of Kentucky.

WHITE-FRINGED BEETLE (Pantomorus leucoloma Boh.)

Louisiana. B. M. Gaddis and assistants (May): First adult of the season was reported on May 13, and the first one collected in a field emergence cage was reported on May 20, both in New Orleans. Two adults were also collected at a nursery.

GREEN PLANT BUG (Chlorochroa uhleri Stal)

South Dakota. H. C. Severin and G. I. Gilbertson (May 23): Severe outbreak has occurred in the western and northwestern parts of the State, where bugs wintered successfully in large numbers. Immense numbers of eggs have been laid.

Correction: Notes by H. C. Severin under Chlorochroa sayi on page 39 of the April 1, 1941, bulletin, and on page 304 of the August 1, 1940, issue, are now known to be C. uhleri.

SAY'S STINKBUG (Chlorochroa sayi Stal)

Montana. G. B. Mills (May 20): Found in significant numbers in Dawson, Prairie, and Hill Counties.

A SPITTLE BUG (Philaenus leucopthalmus L.)

Delaware. L. A. Stearns (May 12): Prevalent throughout central and northern Delaware on alfalfa, clover, and various grasses.

Maryland. E. N. Cory (May 21): Present on clover at Easton and Woodbine.

C E R E A L A N D F O R A G E

WHEAT AND OTHER SMALL GRAINS

ARMYWORM (*Cirphis unipuncta* Haw.)

Maine. J. H. Hawkins (May 20): Moths have been flying at Orono, Penobscot County, since May 8 and are more abundant than usual.

Ohio. T. H. Parks (May 23): Adults, although not in abundance, were observed during the last 2 weeks at Columbus. No evidence of infestation.

Indiana. J. J. Davis (May 27): The moths were abundant at lights during the month of May.

Kentucky. W. A. Price (May 26): In late May, larvae were more abundant than usual in central Kentucky barley fields with prospects of local outbreaks.

Mississippi. C. Lyle (May 24): Larvae of the army worm were collected from oats and barley in Sunflower County, in the northwestern part of the State, on April 29.

Missouri. L. Haseman (May 26): No destructive infestations have been reported in spite of the earlier heavy flight of moths.

Oklahoma. C. F. Stiles (May 31): The armyworm has done considerable damage to rank wheat and oats throughout the southwestern portion of the State. The damage extends from the Red River to the Kansas border. The most heavily infested counties in the southwest are: Tillman, Jackson, Kiowa, Harmon, Grady, Washita and in the northwest, Blaine and Major. At the present time most of the worms have reached maturity and a number of pupae have already been found.

Texas. F. L. Thomas (May 13): The armyworm is attacking wheat, barley and, to a lesser extent, oats in the following counties: Collingsworth, Briscoe, Childress, Floyd, Motley, Cottle, Hardeman, Foard, Wilbarger, Wichita, Dickens, King, Knox, Baylor, Kent, Stonewall, Haskell, Throckmorton, Jones, Shackelford, Callahan, and Runnels.

HESSIAN FLY (*Phytophaga destructor* Say)

Indiana. D. W. LeHue (May 24): Examination of heavily infested fields of winter wheat near Lafayette, May 19 showed most of the larvae as matured with a few newly pupariated. Two fields showed 10 percent and 18 percent infestation, respectively.

Missouri. L. Haseman (May 26): Surveys throughout the State indicate an infestation in western half. Heavy infestations are scattered, but in some fields in southwestern Missouri, during the third week in May, it was reported that 80 percent of the straws were infested and 25 to

30 percent of the heads already lodging.

Nebraska. H. D. Tate (May 17): The first adult was observed in Gage County, in the southeastern part of the State, on April 16. Large numbers of "flax seed" were found in volunteer wheat on a farm in Lancaster County on April 24 but apparently none had emerged.

Kansas. H. R. Bryson (May 26): The hessian fly situation is more serious than it has been for several years. One report from Marshall County, in the northeastern part of the State, stated that some fields of wheat had been plowed up.

Oklahoma. C. F. Stiles (May 31): Hessian fly infestation has increased quite rapidly throughout the extreme northeastern portion of the State this year. The heaviest infestation is in Ottawa County. A few counties in some of the most heavily infested fields show that approximately 50 percent of the straws are damaged.

CHINCH BUG (Blissus leucopterus Say)

Ohio. T. H. Parks (May 23): Inspections of wheatfields in Madison and Union Counties, central Ohio, reveal adults present in some, but they are not considered abundant enough to cause trouble.

Indiana. C. Benton (May 24): Spring migration from hibernation quarters which started near Lafayette April 11 was practically completed May 1. Frequent cool rainy weather during May slowed activity of the bugs so that although mating was first observed in field April 28, the first eggs were not found till May 19 and a few first-instar nymphs May 23. By that date mating was quite general. Field counts in Tippecanoe County May 19 showed some fields of thin winter wheat to have moderate to heavy infestations of overwintering bugs. In Benton County counts May 22 showed generally moderate infestation with occasional heavy infestation of winter wheat and spring barley. Oat fields in both counties in the western part of the State showed only a trace of infestation.

Illinois. W. P. Flint (May 24): There is a moderate, scattered infestation over the central part of the State. Eggs were abundant on May 23, but no young have been observed.

Iowa. H. E. Jaques (May): There is a light to heavy infestation in most counties of the southwestern part of the State and a light to moderate infestation in a few counties in the southeastern and northwestern parts of the State.

Iowa. C. J. Drake (May 27): Overwintering bugs have practically completed migration to small grain, although a few may still be found in timbered areas and grass land. Heaviest infestations occur in the counties of Shelby, Harrison, Monona, and Crawford, in the western part of the State. Threatening populations, and much more spotted in nature, were found in scattered fields in all counties examined west of Polk, also in portions of Muscatine and Louisa Counties, in

the eastern part of the State. The highest populations were found in wheat and barley fields. Populations in oats were highly variable. Egg laying is in progress and it is easy to find eggs. Only three newly hatched bugs were observed. Weather conditions have been very favorable for migration and development.

Missouri. L. Haseman (May 26): Egg laying and hatching of the chinch bug was observed by G. D. Jones in southwestern Missouri during the third week of May. Movement of wheat has been later than usual throughout west-central, central, and north Missouri, and indications to date are that, in spite of reports of scattered heavy infestations and of a rather heavy carry-over of bugs in the western half of the State, the pest is not as threatening as expected.

Kansas. H. R. Bryson (May 27): The growing conditions have been conducive to the production of a rank growth of wheat. These conditions have retarded the chinch bugs' activities so that they do not threaten to become such a menace in the whole of the eastern two-thirds of the State as they did early in the spring. The area in which they are most abundant is that which includes the counties in the blue-stem region of the State. Frequent heavy rains in the southeastern counties have reduced their numbers considerably.

Oklahoma. C. F. Stiles (May 31): The infestation throughout northeastern Oklahoma is very spotted. In some fields there are as many as 20 adults per linear foot of drill row and some 100 to 150 nymphs while in other fields a mile or two away you have to search to find a single bug.

#### GREEN BUG (Toxoptera graminum Rond.)

Georgia. P. M. Gilmer (May 10): The green bug is still present in small grains in Tift County and has probably served to build up a high concentration of parasites.

#### ENGLISH GRAIN APHID (Macrosiphum granarium Kirby)

Virginia. F. W. Poos (May 3): Abundant on oats in southern Virginia. (Det. by P. W. Mason.)

#### A SAWFLY (Dolerus spp.)

Ohio. T. H. Parks (May 23): Sawflies, while present every year in wheat, are much more abundant this year, being found in three south-central counties. There is no serious loss in prospect and the larvae are in the last-instar stage.

#### CORN

#### CORN EAR WORM (Heliothis armigera Hbn.)

Florida. J. R. Watson (May 22): The corn ear worm has been doing about the usual amount of damage, working as a budworm in corn.

Texas. E. F. Pepper (May 21): Last year 500 acres of sweet corn at Elsa, Hidalgo County, in southeastern Texas, was treated for corn ear worm. This year 2,000 acres are being sprayed.

California. A. F. Howland (April 30): In the Indio (Imperial County) region 96 percent of the ears examined in untreated fields were infested with worms. Commercial damage amounted to about 15 percent. (Det. by A. F. Howland.)

R. Wilcox and A. F. Howland (May 14): In Yorba Linda, Orange County, in the southern part of the State, about 90 percent of the tassels in a field of Golden Cross sweet corn were infested with from first- to fourth-instar larvae. A few larger larvae were also present.

EUROPEAN CORN BORER (*Pyrausta nubilalis* Hbn.)

Massachusetts. A. I. Bourne (May 24): Pupation of the European corn borer began considerably earlier than normal - fully two weeks ahead of last year's record.

Connecticut. N. Turner (May 23): The warm weather in April caused unusually early pupation and first generation adults are already flying. No eggs were found on sweet corn at Mt. Carmel, in New Haven County, on May 21.

New York. L. A. Carruth (May 25): Spring development of the multiple-generation in eastern New York during May is at least 2 weeks in advance of the development observed during the preceding 2 years. Moth emergence began on Long Island about May 10 and in the Albany area on about May 15. In the latter area moth emergence had reached the 30 percent level by May 24, at which time one field was observed where egg masses were present at the rate of approximately 50 per 100 plants.

Maryland. C. Graham (May 10): Moths began to emerge in a cage at College Park today, in Prince Georges County.

Virginia. H. G. Walker and L. D. Anderson (May 28): Although large numbers of larvae overwintered and pupated in certain parts of Princess Anne County, eggs and young larvae are very difficult to find, probably being due to the dry hot weather.

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus* Zell.)

South Carolina. O. L. Cartwright (May 21): This borer is causing much more damage to corn than usual at Florence, in the eastern part of the State.

Florida. J. W. Ingram and E. L. Bynum (May 3): A considerable number of sugarcane plants had been killed near Gainesville.

CORN FLEA BEETLE (Chaetocnema pulicaria Melsh.)

Ohio. N. F. Howard (May 12): On May 4 flea beetles were seriously injuring  $3\frac{1}{2}$  acres of sweet corn at Coal Run, in the southeastern part of the State. (Det. by H. S. Barber.)

Mississippi. M. L. Grimes (May 24): Damage to corn in Neshoba County by the corn flea beetle was reported.

SOD WEBWORMS (Crambus spp.)

Indiana. J. J. Davis (May 27): Sod webworms were reported damaging corn at Franklin, 20 miles south of Indianapolis, May 23. Numerous reports have been received since then from various localities and as far north as Renesselaer, 30 miles north of Lafayette.

Kentucky. W. A. Price (May 26): Sod webworms are destructive to corn late in May at Nicholasville, Jessamine County, and Calhoun, McLean County.

TOOTHED FLEA BEETLE (Chaetocnema denticulata Ill.)

Georgia. J. W. Ingram and E. K. Bynum (May 4): Flea beetles severely injured sugarcane on a farm near Cairo. (Det. by H. S. Barber.)

CORN ROOT APHID (Anuraphis maidi-radicis Forbes)

Kentucky. W. A. Price (May 26): The corn root aphid was found doing considerable damage to corn in Fayette and Jessamine Counties in central Kentucky on May 24.

Iowa. H. E. Jaques (May): The corn root aphid was found in Chickasaw and Keokuk Counties, in the eastern part of the State.

ALFALFA AND CLOVER

ALFALFA WEEVIL (Hypocra postica Gyll.)

Ohio. T. H. Parks (May 16): The alfalfa weevil has been found in Gallia County, in the southeastern part of the State. Apparently the insect has been present for some time, as it is uniformly distributed in the northwestern part of the county. It has done little economic damage.

Utah. C. J. Sorenson (May 21): The alfalfa weevil has been found in larval, pupal, overwintered, and newly emerged adult stages at Toquerville and Saint George, in the southwest corner of the State. This is the first record in this section. Damage has been moderate on first-growth alfalfa in the heaviest infested fields. No apparent injury on second-growth alfalfa. (May 8): Larvae are doing considerable damage at Erda, Tooele, and Grantsville, in northern Utah.

G. F. Knowlton (May): The alfalfa weevil is moderately abundant in the northwestern section of the State as well as in Sanpete and Carbon Counties. The larvae are small. In some fields at Elgin injury is

severe, 30 larvae per net sweep being taken. The larval parasite is abundant at Taylorsville, as many as 6 per net sweep being taken.

Nevada. G. G. Schweis (May 20): The larvae are already feeding on the plants, with a large number of eggs still unhatched, in the western part of the State.

California. A. E. Michelbacher (May 22): The weevil is rather scarce in the northwest section of the San Joaquin Valley. On May 15, the number of larvae collected to the 100 sweeps of an insect net in the different fields ranged from 1 to 100, while the adult count ranged from 1 to 63. In the agricultural region adjacent to the San Francisco Bay the larval count on May 17 ranged from 1 to 87; the adult count ranged from 1 to 3. Parasitism, based on rearing out the parasites from last instar weevil larvae collected on May 6, was 98 percent for the San Joaquin Valley and 92 percent for the region adjacent to the San Francisco Bay.

#### CLOVER LEAF WEEVIL (*Hypera punctata* F.)

Maryland. F. F. Dicke (May 1): Injury by larvae was observed in a number of fields of red clover at Knoxville, Frederick County, in the northeastern part of the State. Pupation reduced the population some by May 1 and a fungus killed most of the remaining larval population.

E. N. Cory (May 5): Fungus is present on weevil at Bel Air. (Det. by E. N. Cory.)

Iowa. H. E. Jaques (May): The weevil is present in Keokuk and Davis Counties, in the southeastern part of the State.

C. J. Drake (May 29): In eastern Iowa the clover leaf weevil almost entirely defoliated a field of sweetclover near Muscatine during the early part of May. Other infestations of lighter nature were found near North Airport in red clover and alfalfa. Small infestations were also observed near South Buffalo.

Utah. G. F. Knowlton and assistants (May): On May 2 clover leaf beetles were causing severe injury to some alfalfa and clover at Orem in Utah County. Damage is also occurring in Box Elder, Davis, Salt Lake, and Sanpete Counties.

#### A WEEVIL (*Hypera brunneipennis* Boh.)

Arizona. W. C. McDuffie (May 29): In the Yuma Valley egg and larval populations of the legume weevil were inconsequential by the early part of April; however, cocoons were numerous most of April and the peak of new-generation adults obtained during the latter part. Earliest emerging new adults began migrating from fields in search of aestivating quarters early in April, but the greatest exodus occurred late in April and early in May. By mid-May only an occasional adult or larva could be collected in course of fields sweepings, which in-

dicated that the active season was complete. New-generation adults are now in aestivation and will remain inactive until late in November and early in December. Owing to the abundance of sour clover the past season and the heavy production of adults on this host, adult populations are considered larger than at any time since the discovery of the weevil in 1939. It is believed, however, that populations are insufficient to cause more than slight damage to a few alfalfa fields adjacent to most heavily populated aestivating sites.

**SWEET CLOVER WEEVIL (Sitona cylindricollis Fahr.)**

**Illinois.** W. P. Flint (May 24): The sweetclover weevil has caused heavy damage in the northern fourth of the State. Adults have been taken in about the northern half of the State. No commercial damage has occurred, except in the northern fourth to third.

**Minnesota.** A. G. Ruggles (May 19): The sweetclover weevil is quite abundant around Saint Paul and Minneapolis.

**North Dakota.** F. G. Butcher (May 23): A weevil tentatively identified as the sweetclover weevil has been reported in northeastern Pembina County near the Canadian border. Apparently this is the first record although evidences of its injury have been observed during the last few years. A few young sweetclover fields have been seriously injured by the adults.

**CLOVER ROOT WEEVIL (Sitona flavescens Marsh.)**

**Michigan.** R. Hutson (May 21): The clover root curculio has been very troublesome, feeding on sweetclover on the experimental plots at East Lansing.

**CLOVER SEED CATERPILLAR (Laspeyresia interstinctana Clem.)**

**Delaware.** J. M. Amos (May 19): A field of red clover at Townsend, in New Castle County, was severely damaged by the clover seed caterpillar. About 70 percent of the buds contained larvae which were one-half to full grown. An occasional pupa was found. Examination of a field near Dover, Kent County, showed the insect present but not quite so numerous.

**ALFALFA CATERPILLAR (Colias erythraea Bdv.)**

**Utah.** G. F. Knowlton and assistants (April 30): Alfalfa butterflies are present in the Uinta Basin.

**California.** A. E. Micholbacher (May 22): In the northwest portion of the San Joaquin Valley larvae are increasing in numbers. On May 15 the number collected in the different fields ranged from 0 to 18. In the area adjacent to the San Francisco Bay the larvae are still scarce. Only a very few larvae were found to be parasitized.

COWPEAS

COWPEA CURCULIO (Chalcodermus acneus Boh.)

South Carolina. W. M. Upholt (May 17): A few adult curculios were active in outdoor hibernation cages by April 28 at Clemson, in the north-western part of the State.

COWPEA WEEVIL (Callosobruchus maculatus F.)

Georgia. T. L. Bissell (May 15): Adult cowpea curculios are emerging very rapidly from hibernation to trap-cowpea plants.

VETCH

VETCH BRUCHID (Bruchus brachialis Fahr.)

Maryland. E. N. Cory (February 13): Reported from Rhodesdale, in Dorchester County, in vetch seed. (Det. by U. S. Nat. Museum.)

Virginia. F. W. Poos (May 6): This species was quite abundant on vetch at Suffolk. An average of 7 adults were collected in each 20 sweeps of the insect net.

A WEEVIL (Sitona lineata Lec.)

Washington. L. G. Smith (May 10): The county of San Juan recently sent in a report that Sitona weevil, discovered for the first time there last season, was causing damage to peas and vetch. T. A. Brindley, of the Pea Weevil Laboratory at Moscow, and the writer made a survey of the Island to determine the extent of damage on April 23, 1941. There was a heavy infestation of the weevil in all Austrian winter field peas, Canadian peas, and vetch seed fields. Garden peas in home gardens were severely damaged. Damage was particularly severe on spring peas and vetch.

GRASS

MEADOW PLANT BUG (Miris dolobratus L.)

Kentucky. W. A. Price (May 26): The plant bug has been very numerous on bluegrass in central Kentucky since the first week of May.

TARNISHED PLANT BUG (Lygus pratensis oblineatus Say)

Kentucky. W. A. Price (May 26): The tarnished plant bug was unusually numerous on bluegrass in Bourbon County during late May.

LEAFHOPPERS (Cicadellidae)

Utah. G. F. Knowlton (May 20): At least three kinds of leafhoppers are extremely abundant and evidently damaging grass in meadows near Wales, Sanpete County.

F R U I T I N S E C T S

SAN JOSE SCALE (Aspidictus perniciosus Comst.)

Mississippi. M. L. Grimes (May 24): Reported as abundant on untreated trees in the Meridian area.

Missouri and Kansas. H. Baker (May 22): This insect, which has been of no importance and scarcely noted in apple orchards in the vicinity of Saint Joseph, Mo., for a number of years, appears to be increasing in abundance. No heavy infestations have been observed but light ones have been noted in a number of orchards in northeastern Kansas and northwestern Missouri.

WHITE PEACH SCALE (Aulacaspis pentagona Targ.)

Connecticut. E. P. Felt (May 23): In usually small numbers at Stamford.

New Jersey. E. P. Felt (May 23): Reported from Freehold, Monmouth County.

South Carolina. J. A. Berly (May 15): Rather abundant on portion of iris rhizomes above ground, close to a heavily infested kudzu vine, at Anderson, Anderson County, in the northwestern part of the State.

A SCALE (Lecanium sp.)

Oregon. S. C. Jones (May 20): Most of the lecanium scales reached maturity at Salem, in the northwestern part of the State, on March 31; eggs found under scales on April 2.

WESTERN TUSSOCK MOTH (Hemerocampa vetusta Bdv.)

California. S. Lockwood (May 15): Present in the prune and apple orchards from Sebastopol, Sonoma County, to Watsonville, Santa Cruz County.

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica soror Lec.)

California. A. E. Michelbacher (May 22): Emerging in large numbers for the last 10 days. At Brentwood, Contra Costa County, on May 14 the average number of beetles was 25 per tree in the most heavily infested orchard examined.

APPLE

CODLING MOTH (Carpocapsa pomonella L.)

New York. D. W. Hamilton (May 27): First adults captured in bait traps at Poughkeepsie on May 8, as compared to May 26, 1940, and a mean of May 22 for an average of the years 1936-40. Number of females captured in bait traps increased on May 15, and peak captures occurred from May 19 to 21, and on May 25. First larval entrance found in the fruit on May 26, 16 days earlier than in 1940, and 13 days ahead of

the average date for the period 1936-40.

Pennsylvania. H. M. Steiner (May 24): First emergence of adults in Adams County, in the southern part of the State, occurred in cages on May 5. First moths captured in bait pails on May 7. Large catches in bait pails on May 19 and 20. First entrances in apple observed on May 22.

Delaware. L. A. Stearns (May 24): Twenty-five percent of overwintered larvae had pupated by April 18; 61 percent by May 1; 87 percent by May 8; and 91 percent by May 20. First emergence of spring-brood adults occurred on April 29; peak of activity, as indicated by bait pans, occurred from May 13 to 19.

Maryland. C. Graham (May 24): Emergence in orchards began on May 6 at Frederick; on May 7 at Hancock, in the northwestern part of the State; and on May 8 at Easton in Talbot County.

Virginia. A. M. Woodside (May 22): Flight of moths has apparently passed its peak in Albemarle County. Larvae began entering apples about May 16. Peak of flight probably not yet reached in Augusta County, where larvae are entering fruit in small numbers. Emergence in most orchards somewhat lighter than last season.

Georgia. W. H. Clarke (May 1): First adults caught in bait pots at Cornelia, in the northwestern part of the State, on April 28; considerable number taken from bait pots today.

Ohio. T. H. Parks (May 23): First adults caught in bait traps in southern Ohio on May 5, many moths being in flight between May 14 and 22. Emergence in central Ohio not extensive until May 14, heavy egg-laying being in progress now. Adults began to emerge on May 19 at the western end of Lake Erie and are now appearing around Cleveland.

Indiana. L. F. Steiner (May 1): Emergence of adults (2 males) began in a cage at Elberfeld, Warrick County, in the southwestern part of the State, on April 29, and 1 moth emerged at Vincennes on April 30 in 1 of 4 cages. One moth caught in bait trap at Vincennes on April 30. (May 15): A total of 3,481 moths caught in 268 traps in the Vincennes area from May 8 to 14, inclusive. A total of 1,175 moths emerged in 4 cages. Activity and moth abundance are now approaching major peaks in this area. (May 22): Hot, dry weather has speeded up larval hatch, and wormy apples can be found in considerable numbers in the best-treated orchards. Owing to the dryness, the apples are smaller in relation to the stage of codling moth development than has been the case in any of the last 7 years. Bait traps indicate that moth activity is now at or near its peak.

Illinois. S. C. Chandler (May 19): First larval entrances in apples at Carbondale, Jackson County, in the southern part of the State, on May 15.

W. P. Flint (May 24): Emergence practically 80-percent complete in southern Illinois on May 22. Winter survival high, indicating a heavy first brood of larvae.

Michigan. R. Hutson (May 21): Approximately 25-percent pupation at Mason, Ingham County, on May 20.

Kentucky. W. A. Price (May 26): Emergence in apple orchards unusually heavy for the middle of May; larvae began entering fruit late in the month.

Missouri. L. Haseman (May 26): Greatest intensity of moths occurred between May 10 and 17 generally, and in central Missouri larvae in considerable numbers began entering fruit on May 20 to 22.

Missouri and Kansas. (May 17): Emergence of spring-brood moths first observed in orchards in northeastern Kansas and northwestern Missouri on May 5; first moths caught in bait traps on May 11 and 12, and first eggs found on May 16. (May 22): Peak moth catch in bait traps on May 19. First larval attack noted on May 21.

Utah. C. J. Sorenson (May 14): Apparently 100 percent of the larvae have overwintered at Pleasant Grove, Utah County. First adult caught in bait trap on May 12. A few eggs and many fresh pupal cases found today.

Nevada. G. G. Schweis (May 20): Very little mortality.

Washington. C. C. Alexander and E. J. Newcomer (May 24): Peak catch of moths occurred on May 10 at Yakima, although large numbers were caught from May 19 to 23. First egg found on April 29 but, owing to cool, windy weather prior to May 18, not many eggs had been deposited. Egg deposition heavy since then.

#### EASTERN TENT CATERPILLAR (Malacosoma americana F.)

Connecticut. M. P. Zappe (May 22): Rather scarce north and east of Bridgeport on wild cherry and fruit trees. More abundant in Fairfield County. Increasingly abundant toward the New York State line.

New York. E. P. Felt (May 23): Larvae have largely completed their growth, and in many places within 50 miles of New York City completely stripped wild cherries may be seen.

R. E. Horsey (May): Uncommon in an ornamental crab apple planting at Rochester. Reported as very numerous a few years ago. Tent with caterpillars about full grown was found on May 21.

N. Y. State Coll. Agr. News Letter (May): Unusually abundant in Rockland and Green Counties, in eastern New York, but scarce in the northwestern part of the State, in Wayne, Orleans, and Niagara Counties.

New Jersey (May 26): R. J. Kowal and R. T. Webber (May 21): Heavy defoliation noted in Somerset, Hunterdon, and Mercer Counties. Feeding practically completed now.

Pennsylvania. G. B. Sleesman (May 21): One thousand pupae collected from localities near Philadelphia on apple, cherry, and other trees, in order to determine percentage of parasitization. Some fungus disease is apparently killing the larvae in great numbers.

R. J. Kowal and R. T. Webber (May 21): Heavy infestation noted in northern Bucks County.

Delaware. H. F. Dietz (May 12): Much more abundant than usual, especially on wild cherries. Most of the wild cherry trees between Wilmington and Philadelphia, Pa., very seriously defoliated.

L. A. Stearns (May 20): More abundant than observed at any time in the last 12 years on wild cherry and apple in New Castle County on May 9. Larvae now about full grown.

Maryland. E. M. Cory (April 21): Tent caterpillars numerous in Anne Arundel County; fairly common in Prince Georges and Montgomery Counties.

W. E. Bickley (May 7): Very heavy infestations in Baltimore and Carroll Counties.

Ohio. E. W. Mendenhall (May 23): Observed in a few apple orchards in Fulton and Putnam Counties, in the northwestern part of the State; light damage.

Illinois. W. P. Flint (May 24): Abundant in both southern and northern Illinois, but not present in the central part of the State.

Tennessee. G. M. Bentley (May 23): Occurring on wild cherry and apple trees in the western and central counties on May 1. Leaves badly eaten and trees highly webbed.

L. B. Scott (May 19): Unusually abundant in north-central Tennessee during April and early in May. Larvae attacked practically all shade trees and, in some instances, entered houses.

Mississippi. C. Lyle (May 24): Specimens on wild cherry received from Hinds County late in April. Observed in small numbers in Covington and Oktibbeha Counties at the same time.

Minnesota. H. Milliron (May): Scarce on wild cherry at Pine City.

#### FRUIT TREE LEAF ROLLER (Cacoecia argyrospila Walk.)

New York. N. Y. State Coll. Agr. News Letter (May 5): Heavy infestation in the lower Hudson Valley. A few larvae have appeared in Clinton County. Abundant in the northwestern part of the State, and in

Onondaga County this pest is a most serious problem, especially where treatments were not applied. First appearance to any extent in Seneca County was on April 25.

Illinois. W. P. Flint (May 24): Very abundant throughout western Illinois. Very serious injury caused in apple orchards throughout the west-central part of the State. Also abundant in woodlands, greater numbers actually occurring there than in orchards. Somewhat less migration by wind-borne larvae from woodland to orchard than in 1940. First pupae found in western Illinois on May 18, where pupation is now general. Very little parasitization observed to have occurred.

Missouri. L. Haseman (May 26): Intensity of infestation in eastern Missouri definitely less than a year ago, but in central Missouri it is decidedly heavier, most of the larvae being full fed and beginning to pupate on May 20. Damage very severe to both fruit and foliage. Parasites and predators very active.

Utah. G. F. Knowlton (May 20): Larvae are curling many leaf masses together at Chester, Sanpete County.

RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana* Walk.)

New York. D. E. Greenwood (May 21): First moths on apple noticed around April 20 in the insectary at Geneva. First eggs observed on April 28; eggs still present in the field on May 21, approximately 50-percent hatched.

N. Y. State Coll. Agr. News Letter (May): Very plentiful in the western part of the State. Egg masses numerous in some orchards and have begun to hatch.

A TORTRICID (*Pandemis limitata* Rob.)

New York. D. E. Greenwood (May 21): Larvae overwinter in hibernacula. Pupae now present, although most of the larvae are still in the last instar in insectary at Geneva.

FOUR-BANDED LEAF ROLLER (*Eulia quadrifasciana* Fern.)

New York. D. E. Greenwood (May 21): Emergence of adults around April 20 in insectary at Geneva. Larvae approximately  $\frac{1}{2}$  inch long.

GREEN FRUITWORM (*Graptolitha antennata* Walk.)

New York. N. Y. State Coll. Agr. News Letter (May): Abundant in the lower Hudson Valley. A few have appeared in Clinton, Seneca, and Oneida Counties.

PEAR BORER (Conopia pyri Harr.)

Virginia. A. M. Woodside (May 22): Large numbers of adults being captured in codling moth bait traps in one orchard near Staunton.

A TENTIFORM LEAF MINER (Ornix geminatella Pack.)

Ohio. T. H. Parks (May 23): Observed on May 16 to have infested apple leaves in several orchards in Gallia County. Traces of them found on May 20 in Lawrence County in southern Ohio.

APHIDS (Aphidae)

Connecticut. P. Garman (May 22): Infestation of Anuraphis roseus Baker and Aphis pomi Deg. generally light to moderate. Ladybeetles numerous in many orchards.

New York. N. Y. State Coll. Agr. News Letter (May): Fruit aphids rather noticeable in eastern New York, but not injurious. Syrphid fly maggots and ladybugs plentiful. In the western part of the State the green aphid (A. pomi) is on the increase, whereas the rosy aphid (A. roseus) and the grain aphid (Rhopalosiphum prunifoliae Fitch) are scarce.

Maryland. C. Graham (May 2): Practically no rosy aphids observed in the entire State.

Virginia. A. M. Woodside (May 22): A. roseus became abundant in untreated apple orchards in Augusta County, but predators have almost cleaned up the infestations.

Kentucky. W. A. Price (May 26): Rosy aphids abundant in some apple orchards late in May; some damage caused to developing fruits.

Wisconsin. C. L. Fluke (May 23): The apple grain aphid hatched on April 14 in Door County and migrants were appearing on May 21; more numerous than usual. The green apple aphid is very scarce; hatching first noticed on April 28.

Missouri. L. Haseman (May 26): Recent check on apple foliage in central Missouri shows just a sprinkle of rosy aphid, but apparently predators and parasites have largely cleared it up.

Minnesota. A. A. Granovsky (May 19): Weather conditions favorable to aphids. A. pomi and R. prunifoliae are very abundant.

Missouri and Kansas. H. Baker (May 22): All species of apple aphids very scarce in northeastern Kansas and northwestern Missouri.

Utah. G. F. Knowlton and F. C. Harmston (May 5): Injury by woolly apple aphid (Eriosoma lanigerum Haussm.) reported as severe on apple trees in the Price area.

California. S. Lockwood (May 15): The rosy apple aphid is not nearly so prevalent as during past years in the coastal apple-producing sections of the State.

LEAFHOPPERS (Cicadellidae)

Massachusetts. A. I. Bourne (May 24): Very few white apple leafhoppers (Typhlocyba pomaria McAtee) seen in orchards.

New York. N. Y. State Coll. Agr. News Letter (May): Nymphs of T. pomaria have appeared in Seneca, Monroe, and Wayne Counties.

Pennsylvania. H. M. Steiner (May 25): First hatching of T. pomaria on apple in Adams County observed on May 1. Hatching completed by May 24 in one orchard, where observations were made. Nymphs moderately abundant in some orchards. First-brood adults observed on May 20.

Missouri. L. Haseman (May 26): Leafhoppers of various species are extremely abundant in central Missouri. One brood has just matured on the foliage of apple, and various species are coming to lights in annoying numbers.

COMSTOCK'S MEALYBUG (Pseudococcus comstocki Kuw.)

Virginia. G. J. Haeussler (May): Hibernated eggs had completed hatching, and all of the nymphs had left the egg masses by May 1 in Albemarle County. Second-instar nymphs first observed on apple on May 6, 12 days earlier than last year. By May 19 at least 80 percent of the nymphs were in the second instar. First males observed beginning to form cocoons on May 21, and first third-instar females observed on the same date, 9 days earlier than last year. On May 13 one first-instar nymph was observed on a peach tree adjacent to a severely infested block of apple at Batesville.

South Carolina. W. M. Upholt (May 20): Much more uniform hatch than in 1940 at Clemson, practically all of the overwintered eggs on apple having hatched by May 5. Apparently no more eggs have been laid.

APPLE CURCULIO (Tachypterus quadrifidus Say)

New York. N. Y. State Coll. Agr. News Letter (May 19): Rather heavy infestation located in Wappingers Falls, about 8 miles southeast of Poughkeepsie, eastern New York.

Missouri. W. F. Turner (May 26): First signs of injury observed on scattered apples in central Missouri. Infestation light.

APPLE FLWA WEBWIL (Rhynchaenus pallicornis Say)

New York. N. Y. State Coll. Agr. News Letter (May 19): Feeding observed for about 2 weeks at South Onondaga, Onondaga County, western New York; found in some blocks in large numbers.

Indiana. L. F. Steiner (May 1): Considerable injury caused to occasional trees at Elberfeld, in the Vincennes area.

ROSE LEAF BEETLE (Nodonota puncticollis Say)

Pennsylvania. H. M. Steiner (May 24): First adults observed feeding on cinquefoil at Gettysburg on May 18. Approximately 10 percent of the apples in one orchard now destroyed.

IMBRICATED SNOUT BEETLE (Epicaerus imbricatus Say)

Maryland. E. H. Siegler (April 25): Weevils found feeding on foliage and buds of apple grafts in nursery at Beltsville.

APPLE MAGGOT (Rhagoletis pomonella Walsh)

Minnesota. A. G. Ruggles and assistants (May 14): Heavy infestation anticipated in Hennepin County.

APPLE LEAF-CURLING MIDGE (Dasyneura mali Kieff.)

New York. F. G. Mundinger (May 6): First adult seen on apple foliage at Rochester on May 6, when some blossoms were beginning to open. No leaf injury seen.

EUROPEAN RED MITE (Paratetranychus pilosus C. & F.)

Massachusetts. A. I. Bourne (May 24): Hatch from overwintered eggs began about April 25, which is unusually early.

Connecticut. P. Garman (May 22): First-generation adults have appeared in many orchards, and an early outbreak threatens.

New York. N. Y. State Coll. Agr. News Letter (May): Abundant in some orchards in Greene and Clinton Counties, in the eastern part of the State, and in Onondaga County, in the western part of the State; rather scarce elsewhere.

Pennsylvania. H. M. Steiner (May 24): Hatch of overwintered eggs complete on April 29 in Adams County. First adults observed on May 1, first eggs on foliage on May 3, and hatching of eggs on foliage on May 16. Second-brood adults appeared on May 24. Heavy infestations on deciduous fruits anticipated at an early date.

Michigan. R. Hutson (May 21): Quite noticeable in untreated orchards at Albion, Galesburg, East Lansing, Benton Harbor, and Shelby.

PEAR LEAF BLISTER MITE (Eriophyes pyri Post.)

Utah. G. F. Knowlton (May 20): Foliage of a few old apple trees heavily attacked near Wales.

A MITE (Acarina)

Virginia. A. M. Woodside (May 22): Heavy infestation in an untreated apple orchard near Fishersville, Augusta County.

PEACH

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Massachusetts. A. I. Bourne (May 24): The very hot weather during the last week has brought plum curculio into the orchards, starting considerable activity. Records of jarring trees indicated that, beginning about May 21, more weevils were present in the orchards than all the previous collections combined.

Connecticut. P. Garman (May 22): Just appearing in most apple orchards in New Haven County. Damage light.

New York. N. Y. State Coll. Agr. News Letter (May): Not very active in the lower Hudson Valley during the first part of May; more abundant now, and damage to apples noticeable in Dutchess County, eastern New York. Adults are feeding and laying eggs on sweet cherries in Ulster County; in Orange County first observed on sweet cherries on May 5 and on pears and apples on May 8.

Pennsylvania. H. M. Steinor (May 26): Eggs observed in small peach fruits on May 5 in Adams County. Dropping of fruits began on May 18 and was well under way by May 24. First larva matured from injured fruits on May 25.

Delaware. L. A. Stearns (May 24): First overwintered adults collected by jarring peach trees at Bridgerville, Sussex County, on April 21; peak of abundance on May 9.

Virginia. A. M. Woodside (May 22): Large numbers of adults have entered peach orchards in Albemarle County. Oviposition did not begin much earlier than last year. No larvae observed leaving fruit, and many very small larvae still present. Some larvae in dropped fruits have been killed by the heat.

Illinois. S. C. Chandler (May 19): Jarring of peach trees at Carbondale shows that infestation is considerably lighter than in 1939, the last crop year.

Georgia. O. I. Snapp (May 21): First full-grown larvae at Fort Valley, central Georgia, left peach drops on May 1, 9 days earlier than last year, and the peak of emergence of larvae from drops occurred on May 10, 11 days earlier than last year. Crop is later than that of last year and the curculio is developing more rapidly than the crop. Therefore, mid-season varieties will probably be subject to a second-brood attack, although they usually escape it. A total of 2,257 larvae were reared from 3/4 bushel of peach drops collected on May 6 in one of the most heavily infested orchards in this locality, repre-

senting an infestation of about 38 percent, as compared with 21 percent last year. Infestation in the Georgia Peach Belt is now heavier than that of 1940, as was anticipated, owing to the single brood in 1940. First pupation of the season at Fort Valley was recorded in the field on May 15.

T. L. Bissell (May 15): Infestation light in treated peach orchards. At Clarkston, DeKalb County, 15 trees jarred on May 13 and 6 trees at Experiment, central Georgia, on May 14 without finding a single curculio. Crop unusually heavy. Drops being picked up at Odessadale, Meriwether County, owing to presence of larvae.

Mississippi. C. Lyle and assistants (May 24): Reported that 65 percent of the fruits of wild plums and untreated peaches are injured in the northwestern counties. Damage observed in Chickasaw, Grenada, Holmes, Monroe, Prentiss, and Tallahatchie Counties, in the northern part of the State.

Missouri. L. Haseman (May 26): Despite a threat of serious infestation a month ago, there is comparatively little evidence now of damage to stone fruits in central Missouri.

#### ORIENTAL FRUIT MOTH (Grapholitha molesta Busck)

Connecticut. P. Garman (May 22): Eggs seen in the field in New Haven County on peach, about 3 weeks earlier than normal.

New York. N. Y. State Coll. Agr. News Letter (May 19): First observed during the week on infested peach twigs in Rockland County, eastern New York.

Delaware. L. A. Stearns (May 24): First twig injury on peach by the first brood noted on May 8; injury general by May 21.

Maryland. C. Graham (May 2): First observed entering peach twigs today at Hancock.

Virginia. A. M. Woodside (May): Flight of spring-brood moths over in Albemarle and Augusta Counties. Some larvae almost full grown. Many more first-brood larvae than normal found in the fruits of peach, probably owing to the hot, dry weather, which has checked the growth of twigs.

Georgia. T. L. Bissell (May 15): Peach shoots infested at Griffin and Woolsey, the first ones being found on April 27.

Mississippi. C. Lyle (May 24): Injured peach twigs received from Greene, Jones, Lafayette, and Yalobusha Counties. Damage to peach twigs reported from Chickasaw, Grenada, Holmes, Montgomery, Monroe, and Tallahatchie Counties.

Indiana. L. F. Steiner (May 1): Adults have been coming to codling moth traps in the Vincennes area since the first of the week ended May 1. Apparently about as abundant as usual in apple orchards in this area.

PEACH BORER (Conopia exitiosa Say)

Georgia. O. I. Snapp (May 15): A few larvae are now more than three-fourths grown on peach at Fort Valley, central Georgia. Infestation heavy where treatments were omitted last fall.

Mississippi. C. Lyle and assistants (May 24): Heavy infestation reported in an orchard in Chickasaw County; also reported from Durant.

PEACH TWIG BORER (Anarsia lineatella Zell.)

Utah. G. F. Knowlton (May 13): Larvae are damaging young peach trees at Farmington.

C. J. Sononson (May 21): All of the overwintered brood is now in the pupal stage at Brigham and Crem, having entered it within the last 10 days. An occasional adult has been observed. In the pupal stage at Toquerville and Hurricane; uncertain whether this is the overwintered brood or the first brood. Feeding injuries are old, apparently made by the overwintered brood. Damage heavy in young untreated orchards in all districts surveyed.

APRICOT

WESTERN PEACH BORER (Conopia opalescens Hy. Edw.)

California. A. E. Michelbacher (May 22): On May 20 at Hollister, San Benito County, 53 apricot trees in some check plots were examined for these borers. Numbers ranged from 0 to 15, averaging 4.2 per tree. Most of the borers were still in the larval stage, although some had made cocoons.

PEAR

PEAR PSYLLA (Psylla pyricola Foerst.)

New York. N. Y. State Coll. Agr. News Letter (May): "Hardshells" appeared on May 12 in Orange County, whereas in Ulster County the first hard-shell stages were found on May 7. Abundant in Monroe County, and found hatching in considerable numbers in Niagara County.

Washington. J. F. Cooper (May 5): Specimens taken from property near Spokane. (Det. by P. W. Oman.)

CHERRY

CHERRY FRUITFLIES (Rhagoletis spp.)

New York. D. W. Hamilton (May 27): First adult of the black cherry fruitfly (R. fausta O. S.) taken in an emergence cage at Germantown,

Orange County, on May 26.

Oregon. S. C. Jones (May 20): Emergence of the cherry fruitfly (R. cingulata Loew) began on May 19 in Marion County, in the Willamette Valley. The black-bodied fruitfly (R. fausta) began emerging from wild cherries (Prunus emarginata) at Corvallis, Benton County, and Clatskanie, Columbia County, in northwestern Oregon, on May 15.

**BLACK CHERRY APHID (Myzus cerasi F.)**

New York. N. Y. State Coll. Agr. News Letter (May 19): Increasing on sweet cherries in Monroe County, western New York.

Ohio. E. W. Mendenhall (May 20): Quite abundant on leaves of sour cherries at Columbus, but no serious damage reported. (May 23): Although numerous on leaves of sweet cherries at Franklin, central Ohio, damage appears to be light.

**CHERRY LEAF MINER (Profenus canadensis Marlatt)**

New York. D. W. Hamilton (May 27): Adults emerged from the soil under cherry trees from April 28 to May 4 near Hudson. Leaf injury was prevalent; most of the larvae had left the leaves by May 26.

**PLUM**

**APHIDS (Aphididae)**

Minnesota. A. A. Granovsky (May 19): Hyalopterus arundinis F. is very abundant.

Utah. G. F. Knowlton (May 22): Mealy plum aphids (H. arundinis) and long-beaked plum-thistle aphids (Anuraphis cardui L.) were seriously curling plum foliage at Perry and Brigham, Box Elder County, northern Utah, on May 16. The mealy plum aphid was damaging terminal and sometimes all foliage on some limbs of small plum trees on May 17 at Willard and Perry. On May 22 H. arundinis and A. cardui were damaging plum foliage at Morgan, Morgan County, in northern Utah where A. cardui and Phorodon humuli Schr. were damaging foliage of ornamental flowering plum.

California. S. Lockwood (May 15): H. arundinis is not nearly so prevalent on apple as during past years in Napa, Santa Clara, and Solano Counties.

**RASPBERRY**

**RASPBERRY FRUITWORM (Byturus unicolor Say)**

New York. N. Y. State Coll. Agr. News Letter (May 5): American raspberry beetles found in Ulster County during the early part of the week; some damage to foliage and buds. However, none have been observed in Dutchess County.

ROSE CURCULIO (Rhynchites bicolor F.)

California. G. S. Kido (May 24): Adults found feeding on raspberry on May 17 in Santa Clara.

CURRENT

IMPORTED CurrANT WORM (Pteronidea ribesii Scop.)

New York. N. Y. State Coll. Agr. News Letter (May 12): Larvae are beginning to defoliate parts of plants in some currant plantings in Ulster County.

Minnesota. A. A. Granovsky (May 19): Very common in the southern half of the State.

Nebraska. D. B. Whelan (May 17): Eggs on gooseberry hatching in Lancaster County on May 1.

APHIDS (Aphididae)

Minnesota. A. A. Granovsky (May 19): The currant aphid (Capitophorus ribis L.) is very common in the southern half of Minnesota.

Utah. G. F. Knowlton (May 22): Aphis varians Patch is beginning to attack terminal leaves and tips of black currant at Morgan; on May 21, A. varians and Amphorophora ribiella Davis were infesting apical growth of black currant bushes at Brigham.

GOOSEBERRY FRUITWORM (Zophodia convolutella Hbn.)

New York. N. Y. State Coll. Agr. News Letter (May): Larvae first found entering gooseberries in Ulster County on May 7; in Orange County webbing was first found on currants in an early planting on May 14.

BLUEBERRY

BLACKBERRY LEAF MINER (Metallus rubi Forbes)

Michigan. R. Hutson (May 21): Very active on blueberries about Benton Harbor and Riverside, Berrien County.

GRAPE

GRAPE LEAFHOPPER (Erythroneura comes Say)

New York. N. Y. State Coll. Agr. News Letter (May 5): Adults present in vineyards in Ulster County.

Georgia. T. L. Bissell (May 15): Injury found on May 8 on older leaves of muscadine vines at Experiment, central Georgia.

Mississippi. D. W. Grimes (May 24): Nymphs of Erythroneura sp. observed on grapes in Humphreys County.

Utah. G. F. Knowlton (May): Some adults of E. comes ziczac Walsh are being found on grape at Farmington, Davis County

GRAPE PLUME MOTH (Pterophorus poriscelidactylus Fitch)

New York. N. Y. State Coll. Agr. News Letter (May 5): Larvae found feeding in one vineyard in Ulster County on May 2.

Ohio. T. H. Parks (May 23): Serious damage by larvae has occurred to terminal leaves of grape in a small vineyard in the city of Columbus.

GRAPE LEAF FOLDER (Desmia funeralis Hbn.)

Ohio. E. W. Mendenhall (May 23): Quite abundant on grapevines in Columbus and vicinity. Some severe damage reported.

GRAPE FLEA BEETLE (Altica chalybea Ill.)

Alabama. F. B. Guyton (May 1): More numerous than ever before on grapes at Auburn. Light damage has occurred.

Georgia. T. L. Bissell (May 15): Vines at Experiment lightly infested on May 8; feeding going on for several days. On May 13 two vines, one cultivated and one wild, were found infested with larvae at Clarkston, DeKalb County. Found on muscadines at Hapeville, Fulton County, today.

PECAN

APHIDS (Aphididae)

Georgia. T. L. Bissell (May 15): Monellia costalis F. abundant on pecan at Milner, producing much honeydew. M. nigropunctata Granovsky and Melanocallis caryaefoliae Davis present in small numbers, the latter having caused a small number of leaf spots.

P. M. Gilmer (May 3): Considerable numbers of black pecan aphids noted in Tift, Lowndes, and Echols Counties.

Alabama. J. M. Robinson (May 23): Yellow pecan aphid found on pecans at Auburn.

Mississippi. C. Lyle (May 24): Specimens of the giant hickory aphid (Longistigma caryae Harr.) received from Harrison and Monroe Counties, where they were on pecan and oak trees.

Texas. C. B. Nickels (May 21): Giant hickory aphid abundant on pecan at Brownwood, Brown County, late in April and early in May.

R. K. Fletcher (May 22): Heavy infestation of Myzocallis funipennellus Fitch on April 24 at Denton.

PECAN LEAF CASEBEARER (Acrobasis juglandis Lo B.)

Texas. J. N. Roney (May 22): Considerable injury to pecan reported on April 9 in Fayette County.

TWIG PRUNER (Hypermallus villosus F.)

Georgia. T. L. Bissell (May 15): Branches of pecan tree cut off by borer, presumably this species, at Odessadale, Meriwether County, and Grantville, Coveta County, in the western part of the State. Wood was eaten away, leaving bark to hold limb. This is a rather common injury.

PERSIMMON

PERSIMMON PSYLLA (Trioza diospyri Ashm.)

Mississippi. C. Lyle and assistants (May 24): Injured persimmon leaves sent from Harrison County on May 5.

A WEEVIL (Curculionidae)

Missouri. L. Haseman (May 26): The gray persimmon curculio is attracting some attention in central Missouri. In some years it is found to be extremely abundant on persimmon.

CITRUS  
GREEN CITRUS APHID (Aphis spiraecola Patch),

Florida. J. R. Watson (May 22): Heavy infestations died down as the dry weather checked any growth on citrus.

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

Florida. J. R. Watson (May 22): D. citri and the cloudy-winged whitefly (D. citrifolii Morg.) were on the wing during the latter part of April.

Alabama. J. M. Robinson (May 23): Adult whiteflies (Dialeurodes sp.) abundant at Auburn, Lee County, on Japanese privet.

Mississippi. C. Lyle (May 24): Light infestation noted in the Meridian area.

Texas. R. K. Fletcher (May 22): Observed on orange on May 19 in Harris County, in the eastern part of the State.

CITRICOLA SCALE (Coccus pseudonagnoliarum Kuw.)

California. R. S. Woglum (May): Hatching has begun. More groves have a scale problem this year than for a long time, owing to several seasons favorable for scale increase.

A RED SPIDER (Anychus clarki McG.)

Texas. W. V. Ausmus (May 3): Heavy infestation of the citrus red spider on the leaves of young citrus at Carrizo Springs, Dimmitt County, has been general over the winter-garden district since late in winter.

CITRUS RUST MITE (Phyllocoptes oleivorus Ashm.)

Florida. J. R. Watson (May 22): The unusually dry weather during the latter part of April and in May has caused an increase in numbers on citrus.

Texas. C. O. Gingrass (May 5): Prevalent on the new crop of citrus in Hidalgo. Control throughout southern Texas delayed, owing to heavy rainfall.

California. R. S. Woglum (May): Silver mite again observed in groves in southern San Diego County, lemons being the most severely attacked.

OLIVE

OLIVE SCALE (Parlatoria oleae Colv.)

California. D. L. Van Dine (May 19): Eggs destroyed by the mite, Hemisarcopeltis malus Shim., a common predator on scale insects. (Det. by H. E. Ewing.)

PAPAYA

PAPAYA FRUITFLY (Toxotrypana curvicauda Gerst.)

Florida. M. R. Osburn (May 17): First infestation in the vicinity of Fort Pierce, on the lower east coast, since the cold weather of January 1940 was found on April 23.

TRUCK-CROP INSECTS

VEGETABLE WEEVIL (Listroderes obliquus Klug)

Mississippi. C. Lyle (May 24): Adults reported from Attala, Grenada, Leake, Madison, Scott, Kemper, Oktibbeha, Franklin, and Lincoln Counties. Plants injured were tomatoes, cabbage, turnips, cotton, and dahlias.

Texas. W. V. Ausmus (April 22): Found destroying tomato and spinach plantings in gardens in Uvalde city limits. First record of occurrence in vicinity of Uvalde.

R. K. Fletcher (May 22): Causing severe injury on April 26 in Harris County. Tomato plants at the experiment station in Brazos County, in the eastern part of the State, were severely damaged late in April and early in May.

STRIPED CUCUMBER BEETLE (Diabrotica vittata F.)

Indiana. J. J. Davis (May 27): Generally less abundant than usual. Weather conditions may be responsible.

Florida. J. R. Watson (May 22): Reported as injuring gourds at Gainesville and cucumbers at Panama City, in the northern part of the State.

Mississippi. C. Lyle (May 24): Abundant in the northwestern section and the Meridian area.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata F.)

Pennsylvania. B. F. Coon (May 17): First appearance occurred on May 14 on beans at Lancaster, in the southeastern part of the State. Adults not numerous.

Georgia. T. L. Bissell (May 15): First infested corn was observed on May 1. A few full-grown larvae were found on May 2, and a newly formed beetle was found on a rose on May 12.

Mississippi. C. Lyle and assistants (May 24): Specimens from Lawrence County were causing damage to corn, the damage estimated as high as 80 percent in some 10- and 15-acre fields in Pearl River County. Also observed injuring corn in Pike County, in the southern part of the State, and abundant in the northwestern counties, the Meridian area, and Oktibbeha County, where beans were being injured.

Kansas. H. R. Bryson (May 27): The spotted cucumber beetles are more abundant than usual. In the vicinity of Manhattan they have been observed causing injury to the foliage of newly planted tomatoes and to beans. They are also abundant in alfalfa fields.

Utah. G. F. Knowlton and F. C. Harmston (April 25): Causing severe injury to cucumbers and corn near Saint George and Hurricane, in the southwestern part of the State. (May 8): Damage so severe on seedling watermelons at Moab, in the eastern part of the State, that several acres were destroyed.

FLEA BEETLES (Halticinae)

New York. N. Y. State Coll. Agr. News Letter (May): Flea beetle injury to cabbage seedlings in plant beds in the eastern part of the State is moderate, although they occur in small numbers. In western New York, early set cabbage in Cayuga and Orleans Counties showed serious damage.

Mississippi. C. Lyle and assistants (May 24): Flea beetles, probably Epitrix fuscula Crotch, were reported as attacking eggplant in parts of Copiah and Lincoln Counties and in Calhoun and Grenada Counties. Phyllotreta vittata discedens Weise was taken on turnips in Attala County and reported as injuring turnips in Calhoun and Grenada Counties.

South Dakota. H. C. Severin and G. I. Gilbertson (May 23): Flea beetles are a serious pest in the Spearfish Valley of the Black Hills.

Utah. G. F. Knowlton and F. C. Harmston (April and May): Reported as damaging tomatoes, radishes, and other garden crops at Saint George and Santa Clara, in Washington County, on April 25. During May, flea beetles injured watermelon and cantaloup at Bluff, San Juan County, and caused some injury to recently set tomato plants in Davis and Weber Counties, and to cabbage plants at Morgan, Morgan County.

Washington. R. S. Lehman (May 19): E. subcrinita Lec. damaged seeded tomatoes at Walla Walla.

SEED-CORN MAGGOT (Hylemya cilicrura Rond.)

New York. N. Y. State Coll. Agr. News Letter (May): Infesting squash plants on Long Island, and early plantings of beans in Columbia and Onondaga Counties.

South Carolina. W. M. Upholt (April 25): Adults very plentiful in barley field at Bennettsville, in the northeastern part of the State. (Det. by D. G. Hall.)

Louisiana. C. E. Smith (April): Adults collected on snap beans and lima beans at Baton Rouge. Larvae were collected on April 14 in sprouting beans. Adults emerged on April 25. (Det. by D. G. Hall as Hylemya sp.)

Iowa. H. E. Jaques (May): Light infestation in Cedar and Keokuk Counties, in the southeastern section of the State.

Utah. G. F. Knowlton, et al. (May 9): Damaged peas, corn, and beans in numerous gardens at Hanksville and Caineville, Wayne County, south-central Utah.

POTATO APHID (Macrosiphum solanifolii Ashm.)

Virginia. H. G. Walker and L. D. Anderson (May 28): Began building up on tomatoes and potatoes on the Eastern Shore during April, but have not become serious.

FALSE CHINCH BUG (Nysius ericae Schill.)

South Dakota. H. C. Severin and G. I. Gilbertson (May 23): Present in alarming numbers in western fringe of counties.

Utah. G. F. Knowlton and F. C. Harmston (May 7): Injured watermelon and cantaloup patches at Bluff, in San Juan County.

A COREID (Corizus viridicatus Uhl.)

South Dakota. H. C. Severin and G. I. Gilbertson (May 23): Gardens in the Spearfish Valley are being damaged.

GARDEN CENTIPEDE (Scutigerella immaculata Newp.)

Utah. G. F. Knowlton (May 1): Seriously damaging young germinating plants in a garden at Providence, Cache County. Three plantings of beans were destroyed on this land last season.

Oregon. H. E. Morrison (May 20): Severe infestations on squash and spinach in Eugene and Corvallis, in the western part of the State.

POTATO AND TOMATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

New York. N. Y. State Coll. Agr. News Letter (May): Present on Long Island.

Pennsylvania. B. F. Conn (May 22): Adults and eggs readily found on potato plants at Lancaster, but injury is not apparent.

Virginia. L. A. Hetrick (May 5): Adults and egg masses are abundant on potatoes at West Point. No larvae noted.

H. G. Walker and L. D. Anderson (May 28): Very abundant in a number of potato fields near Norfolk.

North Carolina. Z. P. Metcalf (May 22): Causing more serious damage than writer has seen for the last several years in the eastern early potato section.

Georgia. W. H. Clarke (April 30): First adult found in a field of potatoes at Cornelia, in the northern part of the State, today.

P. M. Gilmer (May 17): Caused considerable damage to commercial potato crops in Tift County, in the southern part of the State, and large numbers of young larvae are present in untreated fields.

Florida. J. R. Watson (May 22): Severely injuring tomatoes in Lake County and eggplant in the Gainesville section and in Columbia County, in the northern part of the State.

Tennessee. G. M. Bentley (May 12): Infestation on potatoes in Weakley County, in the northwestern part of the State, is 10 percent.

Mississippi. C. Lyle (May 24): Generally abundant over the State.

Ohio. R. H. Nelson (May): Adults present in injurious numbers on recently transplanted tomato plants during the first 2 weeks of May at South Point. Newly hatched larvae were noted on potatoes in the same locality on about May 15.

Iowa. H. E. Jaques (May): Light to moderate infestation in several southern counties, and light to moderate in Boone, Tama, Crawford, and Pocahontas Counties, in the central section, and moderate in Chickasaw County, in the northeastern part of the State.

Missouri. L. Haseman (May 26): Very abundant in central Missouri. The earliest larvae are now half grown or larger.

Nebraska. H. D. Tate (May 5): Beetles, which appeared to have recently emerged from hibernation, were observed in Lancaster County today, the first authentic activity record for this year.

Kansas. H. R. Bryson (May 26): Adults unusually abundant this spring and have caused considerable injury to potatoes and tomatoes. Some tomato plants in coldframes have been injured so that control measures were necessary. Injury caused by the adults was followed by larval injury. Control measures have been necessary to save the potatoes.

Texas. J. N. Roney (May 22): Feeding on potatoes at College Station, in Brazos County.

POTATO FLEA BEETLE (Epitrix:cucumeris Harr.)

Connecticut. N. Turner (May 23): Adults appeared on potatoes about the middle of May.

New York. N. Y. State Coll. Agr. News Letter (May): Actively feeding on tomatoes in Columbia County, and tomatoes and potatoes on Long Island.

Pennsylvania. B. F. Coon (May 19): Very numerous on young potatoes at Lancaster and causing extensive foliage injury. (May 21): Injuring tobacco seedbeds at Lancaster.

Virginia. H. G. Walker and L. D. Anderson (May 28): Very abundant in Accomac County during early part of May.

North Carolina. Z. P. Metcalf (May 22): Not especially serious in eastern part of State.

Indiana. J. J. Davis (May 27): Abundant on tomato.

Mississippi. M. L. Grimes (May 24): Black flea beetles, probably this species, are damaging tomatoes in Neshoba County.

Nebraska. R. E. Hill (May 7): A few specimens were collected today on potato in Lancaster County.

CORN EAR WORM (Heliothis armigera Hbn.)

Virginia. H. G. Walker and L. D. Anderson (May 28): Several moths have been observed in cornfields during the last few days in Princess Anne County.

South Carolina. O. L. Cartwright (May 15): Moths flying at Clemson, in the northwestern part of the State. Eggs found on tomato plants.

W. M. Upholt (May 16): Eggs fairly abundant on leaves of tomatoes in Barnwell County, in the western part of the State. Few first-instar larvae beginning to feed in planting at Edisto Experiment Station.

Mississippi. N. L. Douglass (May 24): Damage to small tomato fruits observed in Carroll County.

Texas. C. O. Gingrass (May 5): Damage severe in many tomato fields in Hidalgo County.

E. F. Pepper (May 21): Tomatoes at Weslaco, Hidalgo County, damaged 5 percent.

POTATO LEAFHOPPER (Empoasca fabae Harr.)

North Carolina. Z. P. Metcalf (May 22): Very serious on some plants in the eastern part of the State.

Iowa. H. E. Jaques (May): Light infestation in Tama County, in the central part of the State, and moderate infestation in Audubon and Mills Counties, in the southwestern section.

POTATO PSYLLID (Paratrioza cockerelli Sulc)

Nebraska. R. E. Hill (May 13): A few specimens were collected on potato in Lancaster County today.

EGGPLANT TORTOISE BEETLE (Gratiana pallidula Boh.)

Louisiana. K. L. Cockerham (May 2): Specimens submitted with report that they were numerous and feeding on potatoes at Sunset, Saint Landry Parish. (Det. by H. S. Barber.)

A PLANT BUG (Horcius dislocatus Say)

Indiana. J. J. Davis (May 27): Reported as attacking potatoes at Westfield, near the center of the State. (Specimens submitted.)

BEANS

MEXICAN BEAN BEETLE (Epilachna varivestis Muls.)

Ohio. R. H. Nelson and N. F. Howard (May): First overwintered adult found on beans at South Point on May 14. Still very scarce. First adults on beans in field at Columbus noted on May 22.

Georgia. P. M. Gilmer (May 3): Appeared much earlier than usual in Tift County. Considerable damage by adults has occurred on plantings of snap beans. This is the second year of early appearance.

T. L. Bissell (May 15): First beetle seen on May 3. Little injury to date.

Mississippi. C. Lyle (May 24): Very light infestations reported in the Meridian area and in Scott and Yalobusha Counties.

BEAN LEAF BEETLE (Cerotoma trifurcata Forst.)

Ohio. R. H. Nelson (May): Common on young beans at South Point early in May. Feeding evident but not serious in many fields.

Indiana. J. J. Davis (May 27): Reported as damaging string and lima beans at Ambia in the western part of the State on May 22.

Illinois. A. F. Satterthwait (April 29): Adult entered a Japanese beetle trap in Champaign today.

Georgia. W. H. Clarke (April 30): A few beetles were caught on small bean plants at Cornelia today. Damage has been light.

T. L. Bissell (May 15): Caused conspicuous damage to beans since the last of April.

Tennessee. L. B. Scott (May 19): Reported on beans from several sections of north-central Tennessee. Normally abundant.

Mississippi. C. Lyle and assistant (May 24): General injury to beans reported. Observed on cowpeas and beans at State College.

PEAS

PEA APHID (Macrosiphum pisi Klth.)

New York. N. Y. State Coll. Agr. News Letter (May 12): An average of 1 winged adult evident per 15 pea plants, about 6 inches high, on Long Island.

Maryland. C. Graham (April 27): Survey of Eastern Shore showed winged female aphids present in all peafields examined. Many young present in some places.

Virginia. A. M. Woodside (May 7): Fifteen-acre field of red and alsike clover near Staunton, in Augusta County, heavily infested, and 5 acres practically killed. Alsike clover apparently more severely damaged than the red.

H. G. Walker and L. D. Anderson (May 28): Heavy infestation developed in some alfalfa, clover, and vetch fields during the early part of May in the Norfolk area and on the Eastern Shore. Large area in one crimson-clover field was killed. Peas escaped with little injury, owing to late appearance of aphids.

Mississippi. C. Lyle and assistants (May 24): English peas injured in Monroe County. Heavy infestations reported on English peas in the Meridian area, in Grenada County, and on sweet peas in the southeastern counties.

Indiana. J. J. Davis (May 27): Reported as abundant on alfalfa in southern part of State early in month. Very abundant at La Fayette on alfalfa, causing noticeable damage.

Wisconsin. J. E. Dudley, Jr. (April 30): Extremely heavy infestation for this time of year. One or more aphids collected in every sweep, and around Madison the infestation ranges from 1 to over 100 per sweep. Most of them are apterous adults. During a survey east, north, and west of Madison, 1 aphid was obtained in every single sweep. Usually there were from two or three dozen, up to 100, and in one sweep 263. Average infestation of from 2 to 10 aphids per square yard in alfalfa, which is damaged severely where there is a heavy concentration.

(May 22): In Dane County, in the southern part of the State, a heavy dispersion of winged forms from alfalfa has been taking place for a week. Alaska peas 10 inches high have infestation of 10 to 15 aphids per net sweep. Late or sweet peas 1 or 2 inches high have considerable infestation, and winged aphids can be found on peas just through the ground.

Missouri and Arkansas. J. E. Dudley, Jr. (April 30): On April 27 Professor Wilson, of Madison, Wis., observed that from Saint Louis north to Madison every alfalfa field inspected was infested. From Hot Springs, Ark., up into Missouri the aphids had already left their winter hosts.

Oklahoma. J. M. Maxwell (April 21): Damaging alfalfa fields throughout the State, the damage in central part being quite severe.

Arizona. T. P. Cassidy (April 22): Collected from alfalfa at Marana, in the southern part of the State. (Det. by P. W. Mason.)

Utah. G. F. Knowlton and F. C. Harmston (April): Winged aphid populations range from extremely scarce on peas to moderately high in Washington, Weber, and Salt Lake Counties, and are present on alfalfa at Jensen and in Pleasant Valley in the Uinta Basin. (May): Invading pea fields in northern part of State, and nymphs are being deposited. Causing moderate damage to alfalfa at Bluff, Moab, Elgin, and Mapleton.

Nevada. G. G. Schweis (May 20): Not numerous enough in any of the western counties to cause any serious damage. Population is remarkably low.

California. S. Lockwood (May 15): Pea aphid has severely infested approximately 1,000 acres of spring-harvested peas in the Sacramento River Delta area.

PEA WEEVIL (Bruchus pisorum L.)

Utah. G. F. Knowlton (May): Pea weevils were emerging from hibernation on May 10. On May 13 they were abundant under loose bark of large boxelder trees at Kaysville, and on May 14 an occasional adult was found in peafields not yet in blossom at American Fork, North Logan, and Hyde Park. Some were still in hibernation under loose poplar bark on dead trees at Taylorsville. At Perry 3 adults were found in 100 sweeps on May 16 on early canning peas. Winter mortality was generally low in areas examined, being the highest in Cache Valley.

CABBAGE

IMPORTED CABBAGE WORM (Pieris rapae L.)

New York. N. Y. State Coll. Agr. News Letter (May): Butterflies present in unusually large numbers for this season of year. Apparently there has been a very high winter survival or a migration of butterflies. Eggs were being laid in Cayuga County on early set cabbage on April 29.

Mississippi. C. Lyle and assistants (May 24): Reported as present on untreated cabbage plants in the northeastern part of the State and in the Durant area.

Iowa. H. E. Jaques (May): Light infestation in Davis County, in the southern part of the State, and in Pocahontas County, in the northwestern section.

Missouri. L. Haseman (May 26): Butterflies have been on increase since middle of May. Larvae from half to two-thirds grown are damaging untreated cabbage plants.

Utah. G. F. Knowlton (May 9): Butterflies are active at Springville, Farmington, Provo, Pleasant Grove, and Salt Lake City. (May 20): Abundant near Chester and Manti.

DIAMONDBACK MOTH (Plutella maculipennis Curt.)

Utah. G. F. Knowlton (May 8): Larvae are heavily attacking blossoms and leaves of the serious weed, whitetop, near Ogden.

CABBAGE SHOOT WEEVIL (Ceutorhynchus assimilis Payk.)

Washington. L. G. Smith (May 10): Present on wild turnip blossoms on all farms observed on San Juan Island on April 23. Numerous in blossoms in cabbage seed plantings in Skagit County, in the northwestern part of the State, on April 21.

CABBAGE MAGGOT (Hylenna brassicae Bouche)

New York. N. Y. State Coll. Agr. News Letter (May): Egg laying passed its peak on Long Island by the middle of the month. Infestation is much heavier than usual, with severe injury to red radishes. Flies are present in Delaware County in the Arkville and Long Eddy sections, and they are also numerous in several counties in the western part of the State.

Pennsylvania. H. N. Worthley (May 2): Eggs laid between April 29 and May 2 at State College, about 10 days after first setting of early cabbage. (May 21): Flies still laying eggs on early set cabbage at State College. Maggots found on May 16 in stems of untreated plants.

Illinois. W. P. Flint (May 24): Very abundant and destructive in northern Illinois.

Washington. L. G. Smith (April 30): Three out of about 20 infested home gardens on Naches Heights, Yakima, reported 50 percent infestation of maggots in radishes harvested.

#### APHIDS (Aphididae)

Pennsylvania. H. N. Worthley (May 21): Colonies now forming on early cabbage at State College, but not numerous enough to cause injury.

Virginia. H. G. Walker and L. D. Anderson (May 28): Many fields of seed kale ruined because of abundance of cabbage aphids. Also very abundant in many cabbage fields in the Norfolk area and on the Eastern Shore.

Ohio. R. H. Nelson (May): Light to very heavy infestations developed on plantings at South Point during May.

Washington. L. G. Smith (April 21): Infestations just starting on tips of cabbage seed plants in Skagit County. A few stalks were in bloom. Writer observed some completely infested plants on one farm, and colonies of aphids which were just getting started on the tips at another farm in the vicinity.

#### ONION THIRIPS (Thrips tabaci Lind.)

Florida. J. R. Watson (May 22): Very severe in a field of cabbage in the Sanford section, in Seminole County.

#### ASPARAGUS

#### ASPARAGUS BEETLES (Crioceris spp.)

New York. N. Y. State Coll. Agr. News Letter (May): Crioceris asparagi L. was active in Oneida, Onondaga, and Oswego Counties. Parasites found at Fulton on May 16. Beetles depositing eggs on Long Island.

Pennsylvania. B. F. Coon (May 22): Larvae and adults of C. asparagi are feeding on asparagus at Lancaster. Population small. Six adults of C. duodecimpunctata L. were taken from an old asparagus plant at Lancaster.

H. N. Worthley (May 21): Adults of C. duodecimpunctata and C. asparagi were first seen on asparagus at State College on about May 10. Eggs of the latter were observed on May 17.

Maryland. E. N. Cory (April 24): Present on asparagus in Harford and Baltimore Counties.

Virginia. H. G. Walker and L. D. Anderson (April 30): Heavily infested a 30-acre field of asparagus near Machipongo, on the Eastern Shore.

North Carolina. C. S. Brimley (May 8): First adults of season seen on asparagus at Raleigh on May 8.

South Carolina. C. F. Rainwater (May 3): Numerous on asparagus in Calhoun County during week ended May 3 and caused considerable injury to crop.

Minnesota. A. A. Granovsky (May 19): Very numerous and destructive in many asparagus plantings near Minneapolis; one of worst outbreaks in years.

Utah. G. F. Knowlton (May 8): Population apparently was reduced in northern Weber and Davis Counties by the storms and frost, which also injured the asparagus shoots. All eggs laid at that time were destroyed. (May 10): One adult taken at Mapleton, in Utah County. (May 12): Very abundant and damaging some asparagus fields at Plain City and in several other Weber County localities; also on volunteer asparagus in river bottoms and fence rows south of Plain City. Eggs are common.

Washington. L. G. Smith (May 10): Asparagus growers at Prosser, in the southern part of the State, were reported as dusting on April 18. Adults reported as abundant on asparagus at Sunnyside on April 19, but damage not serious. Eggs found but no larvae. Eggs found on plants in Spokane Valley on April 24, the first report of asparagus beetles from Spokane County.

#### DILL

##### BLACK SWALLOWTAIL (Papilio polyxenes F.)

Missouri. L. Haseman (May 26): Heavy flight of butterflies occurred during the middle of May. Half-grown larvae are abundant and feeding on the foliage of dill in central Missouri.

#### ONIONS

##### ONION THIRIPS (Thrips tabaci Lind.)

Virginia. H. G. Walker and L. D. Anderson (May 28): Becoming very abundant on several crops such as onions, cantaloups, cabbage, and celery at Norfolk.

##### A MIRID (Labopidea allii Knight)

Missouri. L. Haseman (May 26): This small, pale-green mirid was reported as very abundant and destructive on onions in a few gardens in central Missouri.

#### RHUBARB

##### RHUBARB CURCULIO (Lixus concavus Say)

New York. N. Y. State Coll. Agr. News Letter (May 5): Numerous complaints of damage to home gardens received.

Michigan. R. Hutson (May 21): Specimen sent in from Nashville.

#### SPINACH AND BEETS

SPINACH LEAF MINER (Pegomya hyoscyami Panz.)

Ohio. T. H. Parks (May 23): Serious damage has occurred to both spinach and beets in commercial truck gardens of Hamilton County, around Cincinnati. Formerly a pest near Cleveland, but has not been serious in that area for a decade.

Indiana. J. J. Davis (May 26): This species, apparently, reported damaging beets at Wabash.

#### CARROT

CARROT BEETLE (Ligyrus gibbosus Deg.)

Missouri. L. Haseman (May 26): Very light in central Missouri, but on May 22 a number of specimens were sent from southwestern part of State.

Nebraska. H. D. Tate (May 17): Adults collected during week of May 11 to 17 in Lincoln, Lancaster County.

Utah. G. F. Knowlton (May): Adults abundant at lights in Logan on May 15. A few were observed on May 11 at Logan, and on May 16 at Salt Lake City.

#### SWEETPOTATO

SWEETPOTATO FLEA BEETLE (Chaetocnema confinis Crotch)

Tennessee. G. M. Bentley (May 16): Reported in Buena Vista section, Carroll County. In a large field of sweetpotatoes infestation was 5 percent; leaves badly eaten.

#### STRAWBERRY

STRAWBERRY WEEVIL (Anthonomus signatus Say)

New York. N. Y. State Coll. Agr. News Letter (May 5): Injury first seen in Ulster County on April 30, and in Dutchess County only a few signs of injury were noticed.

Tennessee. G. M. Bentley (May 21): Infestation on strawberries in Weakley County is 2 percent.

Minnesota. A. G. Ruggles (May 19): Extremely abundant in Ramsey and Hennepin Counties.

STRAWBERRY LEAF ROLLER (Ancylis comptana Froel.)

Kansas. H. R. Bryson (May 26): The strawberry leaf roller is causing considerable injury to the leaves of plants at Manhattan and in northeastern Kansas wherever control measures are not being applied.

Utah. G. F. Knowlton (May 8): Adults are in flight at Willard, Harrisville, and Riverdale.

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus L.)

South Dakota. H. C. Severin and G. I. Gilbertson (May 23): Several reports of severe injury to strawberries received from Brookings, Moody, and Minnehaha Counties, in the eastern part of the State.

SPRINGTAILS (Collembola)

Massachusetts. A. I. Bourne (May 8): Reported as injuring strawberry blossoms in a large planting near Amherst. Specimens submitted.

COMMON RED SPIDER (Tetranychus telarius L.)

Oregon. H. E. Morrison (May 20): First found on April 15 at Corvallis and increased slowly until May 19, after which there was a rapid increase. Threatened to do extensive damage to a 12-acre strawberry planting.

MILLIPEDES (Diplopoda)

Tennessee. G. M. Bentley (May 21): Reported as eating fruits of strawberries in Henderson, Chester County, sometimes as many as six in a berry, in large commercial strawberry fields.

HOPS

HOP APHID (Phorodon humuli Schr.)

Oregon. H. E. Morrison (May 20): Migration of spring migrants occurred early in May, and fairly heavy infestation has been noted all over the Willamette Valley. Seasonal history for this year is apparently 6 weeks to 2 months ahead of last year.

COMMON RED SPIDER (Tetranychus telarius L.)

Oregon. H. E. Morrison (May 17): First noted on hop foliage on May 17 at Independence and Corvallis. Earliest previous record since 1937 was June 6.

TOBACCO

TOBACCO FLEA BEETLE (Epitrix parvula F.)

Pennsylvania. B. F. Coon (May 23): First appearance today on tobacco at Lancaster.

Tennessee. L. B. Scott (May 19): Normally abundant in tobacco plant beds in north-central Tennessee. No serious damage reported.

TOBACCO BUDWORM (Heliothis virescens F.)

Florida. F. S. Chamberlin (May 7): Normal infestations in Gadsden County tobacco fields; adults of the ichneumon parasite Cardiochiles nigriceps

Vier. are more numerous than in many years.

TOBACCO THRIPS (Frankliniella fusca Hinds)

Florida. F. S. Chamberlin (May 28): Owing to the drought the tobacco thrips are increasing rapidly and damage to the shade-grown tobacco crop appears imminent in Gadsden County.

C O T T O N I N S E C T S

BOLL WEEVIL (Anthonomus grandis Boh.)

South Carolina. C. F. Rainwater (May 3): Active in cages in Florence and Calhoun Counties during week ended May 3. Emergence records were begun on May 1, a total of 347 being removed to date. In 1940 emergence records were begun on May 6, only 16 emerging during the entire month of May. In 1939 emergence records were begun on May 2, and through May 5 only 128 had emerged.

F. F. Bondy, et al. (May 24): Emergence from cages in Florence County continued rapidly during the week ended May 24; total emergence was 2,335, as compared with 13 for the same period in 1940, and 581 in 1939. Despite this fact, only 1 weevil has been found in cotton and 3 caught on 1 screen trap near the woods. Dry weather is probably delaying emergence.

Georgia. P. M. Gilmer (May 17): Observed in Tift County this week in considerable numbers in fields near favorable hibernating quarters. Considerably more numerous than for some years and readily found in chopped-out cotton. Appearance rather sudden, since none was found in the same locations last week. Some bud damage in a few fields on small cotton just out of seedling stage. (May 24): Common in some fields in Tift and Berrien Counties; not present in southern Lowndes and Echols Counties.

Florida. C. S. Rude (May 24): Heaviest population found in Alachua County in a field, where there were 40 per acre; none found in the fields examined in Lake County; in Marion County, population ranged from 10 to 20 per acre. Populations reported as very heavy west of the Suwannee River; it is claimed that 1 weevil was found to every third cotton plant in 1 field.

Mississippi. C. Lyle and assistants (May 24): Two adults found on 100 yards of row on one property on May 20, and 1 adult on 100 yards of row in another property, both in Holmes County. None found on farms examined in 6 northwestern counties on May 20.

E. W. Dunham, et al. (May 10): One weevil found in Washington County in small cotton on May 9, the earliest date on which a weevil has been found since the establishment of this station. Considerable scouting done today in this same locality, which is next to the woods, but no more weevils found. (May 24): A total of 5 weevils found this week on 1,700 plants examined on 3 plantations in Washington County, as compared to 9 found on 150 seedling cotton plants on May 27, 1939.

Louisiana. R. C. Gaines, et al. (May 24): Observed in several fields in Madison Parish during the week ended May 24; total taken on field flight screens during the week ended May 23 was 13, as compared to 1 in 1940, and 2 in 1939.

Texas. F. L. Thomas (May 14): Weevils may be found in many cottonfields of central Texas. Also present in the lower Rio Grande Valley, but not in sufficient numbers to justify control measures. (May 21): Higher percentages of overwintered weevils have emerged in south-central and north-central Texas than during any similar period in the last 16 years. At College Station 8.18 percent has emerged, and at Waco, McLennan County, 7.57 percent has become active. Not only are percentage of survival well above the normal of 5.5 percent, but the percentage figures take on more significance when it is remembered that the numbers of weevils entering winter quarters last fall were much greater than average. (May 28): Concentration of weevils in early planted cotton, and there are 4 to 7 per 100 plants in some fields, an exceptionally high population. Emergence at College Station has now reached 11.4 percent, more than double the average.

K. P. Ewing, et al. (May 17): In McLennan County 306 weevils emerged during the week bringing the total to date to 1,358. Percentage emergence is 7.15. A total of 64 weevils was found on 5,700 cotton plants inspected in 23 fields in McLennan and Falls Counties during the week, an average of 1.12 per 100 plants. Average infestation in river-bottom fields inspected was 1.33 weevils per 100 plants, and in the prairie fields 0.74 per 100 plants.

C. R. Parencia (May 24): Three weevils found during the week in Calhoun County.

#### A FLEA BEETLE (Systema sp.)

Georgia. H. O. Lund (May): Young leaves reported on May 12 as punctured to such an extent that 6 acres of cotton in Clarke County had to be replanted. Neighboring cotton just as badly damaged. Severe damage to young cotton reported and observed in Clarke and Barrow Counties on May 21.

T. L. Bissell (May): Seedling cotton and newly set pepper plants severely damaged on May 12 in the western part of Spalding County. Plants damaged until they died. Also found on a weed, feeding in the same way. On May 16 cotton at Pomona was damaged.

W. H. Clarke (May 17): Specimens submitted on May 16 with injured seedling cotton and weeds from Habersham, Habersham County. Moderately heavy damage.

#### BEET ARMYWORM (Laphygma exigua Hbn.)

Arizona. C. D. Lebert (May 15): Serious damage caused on several hundred acres of young cotton in the Phoenix area, 90-percent infestation being found in several fields and 30-percent damage. Also abundant on ornamentals generally over this area.

T. P. Cassidy (May): Reported as appearing generally over the cotton area of the Marana district, and 5,200 acres of cotton in the Eloy area reported as infested. Stands around Casa Grande and Coolidge already injured. Apparently very bad all over the cotton areas of the State.

W. A. Stevenson (May 13): First larvae found on seedling cotton on May 12 at Marana, Pima County. Infestation still incipient. (May 17): Appeared generally over the Salt River and Santa Cruz Valleys and the Casa Grande-Coolidge-Eloy cotton areas during the last week. Very little damage as yet, but apparently, this will be the worst infestation ever experienced in Arizona, owing to the wide distribution. (May 24): Situation began to clear up during the latter part of the week ended May 24, as the larvae had about finished feeding.

BOLLWORM (Heliothis armigera Hbn.)

Georgia. O. I. Snapp (May 21): Young cotton plants, planted after vetch, in a field at Fort Valley, central Georgia, have been seriously damaged.

Texas. K. P. Ewing, et al. (May 24): Total of 43 adults emerged during the week in McLennan and Falls Counties. Total emergence is 200, or 22.2 percent.

COTTON LEAF WORM (Alabama argillacea Hbn.)

Mexico. J. Lamark, Jr. (May 12): One larva collected from cotton about 25 miles southwest of Matamoros on May 9. (Det. by C. Heinrich.)

R. W. Harned (May 29): Three larvae collected from cotton near Matamoros on May 17.

PINK BOLLWORM (Pectinophora gossypiella Saund.)

Texas. L. W. Noble (May 17): A total of 3,885 pink bollworms, or 9.83 percent, has emerged from 39,489 in hibernation cages in Presidio County. Emergence from April irrigated cages has probably passed the peak, but the April-20 irrigated cages probably have not reached the peak. Recent rains have stimulated emergence in the nonirrigated cages in Presidio County. (May 24): Emergence was 622 for the week, as compared with 984 last week. Total emergence is 11.41 percent of the original larvae, a higher percentage of emergence than ever recorded in previous years.

Mexico. R. W. Harned (May 29): First pink bollworms from 1941 cotton collected from cotton blooms about 5 miles west of Matamoros on May 17. (Det. by C. Heinrich.)

COTTON FLEA HOPPER (Psallus seriatus Reut.)

Texas. F. L. Thomas (May 7): Low emergence or hatch in south-central Texas is remarkable. Only in the vicinity of McLennan and Henderson Counties, in north-central and northeastern Texas, respectively, has the hatch

been above average. (May 17): Indications are that emergence from overwintered eggs in McLennan County for the week ended May 17 is about complete, only 214 nymphs emerging during the week, as compared with 3,503 the preceding week. Total emergence is 61,157 from 34 cages. No adults found on 5,700 cotton plants examined in 23 fields. (May 28): Severe and widespread damage caused to early cotton in the lower Rio Grande Valley. High infestation found in early cotton at Port Lavaca.

C. R. Paroncia (May 17): Average of 0.92 adult and 1.34 nymphs found per 100 terminal buds on 4,800 cotton terminal buds inspected in 17 fields in Calhoun County, as compared with an average of 3.09 adults and 1.94 nymphs during the week ended May 18, 1940. Highest infestation found in a small field of March cotton, being 2.7 adults and 13.6 nymphs per 100 buds. (May 24): Average of 1.08 adults and 8.2 nymphs found per 100 terminal buds on 4,500 cotton terminal buds inspected. Infestation in March cotton increased from 16.3 per 100 terminals last week to 79.7 this week. Cotton in this field is being seriously damaged.

#### APHIDS (Aphidae)

South Carolina. F. F. Bondy, et al. (May 24): Light infestations of the cotton leaf aphid (Aphis gossypii Glov.) found in Florence County.

Georgia. P. M. Gilmer (May 17): Cotton aphids appeared this week in Tift County, causing some crumpling of small leaves in a few fields. Parasitization well established in most fields, showing good control from Lysiphlebus testaceipes Cress. and ladybirds. (May 24): Aphids have increased in small areas in some fields in Tift, Berrien, Lowndes, and Echols Counties. One field showed about 1 acre heavily infested.

Florida. C. S. Rude (May 3): Aphids observed in two fields of young cotton, but parasites and predators seemed to be holding them in check.

Alabama. J. M. Robinson (May 23): Cotton aphids found on cotton at Prattville on May 21.

Mississippi. C. Lyle and assistants (May 24): Injury to small cotton plants in the State College area by A. gossypii has ceased since the hot weather began, according to report. A few specimens observed on cotton in the Durant district.

E. W. Dunnam, et al. (May 10): One cotton plant in Washington County found heavily infested in cotton planted on March 24. A few of the large forms were parasitized. (May 24): Three hundred cotton plants of 1 variety examined showed 49 infested with 119 aphids, and 300 of another variety showed 52 infested with 68 aphids. No parasites seen on the Experiment Station when records were made. Observations indicate that aphids and parasites are decreasing on seedling cotton growing next to the woods. Many winged aphids among those counted on the Experiment Station; so far as can be determined, all aphids are of the large forms.

Louisiana. R. C. Gaines, et al. (May 3): All fields of early cotton in Madison Parish observed during the week were found to have a light infestation. Neither parasites nor predators were observed.

#### THRIPS (Thysanoptera)

South Carolina. F. F. Bondy, et al. (May 17): Two species of thrips, Frankliniella fusca Hinds and Sericothrips variabilis Beach, were found on cotton in Florence County during the week, doing some injury.

Mississippi. O. Lyle (May 24): Specimens of thrips (Frankliniella sp.) were collected from cotton in Holmes County on May 20.

E. W. Dunnam, et al. (May 24): Examination of 300 cotton plants of 1 variety in Washington County showed an infestation of 441 thrips, and 300 plants of another variety were infested with 397 thrips.

Louisiana. R. C. Gaines, et al. (May 24): Thrips observed in several cottonfields in Madison Parish.

Texas. F. L. Thomas (May 14): Evidence of injury is beginning to appear in the oldest planted cottonfields of the Brazos Valley.

#### FOREST AND SHADE-TREE INSECTS

##### PERIODICAL CICADA (Magicicada septendecim L.)

Virginia. A. M. Woodside (May 22): Cicadas were heard at Afton and Greenwood, in Albemarle County, on May 8 and 15, at Crozet on May 15 and 22, and one individual was seen on the latter date. They were not numerous. A few were seen and heard near Staunton, Augusta County, on May 23.

Missouri. L. Haseman (May 26): On May 16 a single specimen was picked up on the street in Columbia, which probably merely represents a stray specimen, though a year ago specimens practically ready to emerge were dug up.

##### CANKERWORMS (Geometridae)

Connecticut. P. P. Wallace (May 23): Infestation was generally very light throughout the State on elm. Occasional localities showed feeding had caused some injury.

New York. N. Y. State Coll. Agr. News Letter (May): In Rockland County the worms are confined mostly to the Suffern-Airmont area, where they are plentiful. Injury to foliage is also noticed on Long Island. In Niagara County cankerworms are quite numerous on apple foliage.

New Jersey. R. R. Whitten and R. T. Webber (May 26): On May 14 and 20 two-thirds of the crowns of woodland elms were defoliated in the vicinity of Lamington in Somerset County. Heavier defoliation was reported in the Passaic River Valley, Morris County; also near Peapack,

Somerset County, in the northern part of the State, on some pasture elms. This infestation appears to be the beginning of another epidemic of the species in this region where it caused considerable damage between 1934 and 1937.

Pennsylvania. G. B. Sleesman (May 21): The spring cankerworm (Paleacrita vernata Peck) shows evidence of being very heavy on forest and shade trees in the Philadelphia area.

Ohio. E. W. Mendenhall (May 20): Spring cankerworms and the fall cankerworm (Alsophila pometaria Harr.) are abundant throughout western Ohio and more severe in neglected farm apple orchards. Quite abundant on elms and other shade trees.

N. F. Howard (May 17): Cankerworms are numerous and destructive to elm trees along the Olentangy River.

Indiana. P. T. Ulman (May 22): Spring cankerworm outbreak is very heavy on trees and shrubs at Indianapolis and Noblesville and has spread into adjacent areas where damage had not previously been reported. A check on one area showed complete defoliation of apple, elm, hackberry, walnut, maple, boxelder, buckeye, oak, and locust.

J. J. Davis (May 27): The spring cankerworm is very abundant throughout the northern half of the State. Many trees are being defoliated, and those preferred are elm, hackberry, and apple.

Illinois. W. P. Flint (May 24): Very heavy cankerworm defoliation has occurred in many areas in the northern three-fourths of the State. The worms are now through feeding except in the extreme northern part of the State. Very little parasitization has been observed.

Wisconsin. C. L. Fluke (May 23): Very common in southern Wisconsin, especially on elms.

Tennessee. G. M. Bentley (May 1): Spring cankerworms are occurring on unsprayed apple trees in Memphis, Shelby County.

Minnesota. A. G. Ruggles (May 19): The spring and fall cankerworms are more numerous than for many years in Ramsey and Hennepin Counties, in the eastern part of the State.

Iowa. H. E. Jaques (May): Cankerworms were abundant in the extreme southeastern corner of the State.

C. J. Drake (May 29): The spring cankerworm is extremely abundant throughout a large portion of central Iowa. Many elm and apple trees and, to a lesser extent, white oak, hackberry, and linden trees, have been defoliated in Story, Mitchell, Tama, Benton, Linn, Johnson, Jackson, Clinton, Scott, Muscatine, Louisa, Iowa, Dallas, Polk, Boone, Guthrie, Audubon, Cass, Adair, Pottawattamie, and Mills Counties. The fall cankerworm does not seem to be so abundant.

Missouri. L. Haseman (May 26): With the infestation lighter than in 1940, most larvae in central Missouri were through feeding by May 15. In the north-central part of the State, untreated orchards have been completely stripped.

North Dakota. J. G. Butcher (May 23): Cankerworms are appearing in abundant numbers on elm trees throughout several locations in the eastern part of the State, especially along the Sheyenne River in Cass and Ransom Counties, in city planting in Cavalier, Pembina County, and in various plantings in Minot, Ward County. At Minot the peak moth emergence occurred on about April 9.

South Dakota. H. C. Severin and G. I. Gilbertson (May 23): Worms have again occurred in outbreak numbers along the Missouri River, where they are defoliating trees.

Nebraska. D. B. Whelan (May 7): P. vernata infestation reported on elms on the courthouse lawn in Franklin County.

Kansas. H. R. Bryson (May 26): Cankerworms have caused considerable injury to elm trees as far north as Phillips County, in the north-western part of the State. Many cities avoided serious injury by spraying and banding. Other reports have been received from Edwardsville, Wichita, and Fort Scott, in the eastern part of the State.

Oklahoma. J. M. Maxwell (April 21): The spring cankerworm is causing damage to apples and other orchard and shade trees in the central section of the State, damage in the east-central section being quite severe.

#### FOREST TENT CATERPILLAR (Malacosoma disstria Hbn.)

Massachusetts. J. V. Schaffner, Jr. (May 23): Still locally abundant in parts of Berkshire County, particularly in the vicinity of Richmond near the New York State line. Hatching was general on April 25, and there was a very good hatch.

W. W. Bancroft (May 27): Considerable feeding has been noticed on maple, birch, and oak on the Taconic Range, Hancock-Pittsfield, and Lenox.

Connecticut. R. C. Brown (May 23): The forest tent caterpillar, nearly full-grown, was noted in New Haven County.

New York. E. P. Felt (May 23): Scatteredly abundant in Rockland County and extremely numerous on the edges of the Catskills. The prospects favor somewhat general defoliation in many areas.

Mississippi. C. Lyle (May 24): Caterpillars reported as being so abundant in Covington and Jones Counties in late April and early May that they were getting into homes. Also reported defoliating peach trees in Covington County.

Utah. G. F. Knowlton and assistants (May 22): Poplar foliage attacked by forest tent caterpillars at Moroni, and maple at Murray. They were seriously injuring poplars, willows, and several other kinds of trees and shrubs at Park City, Summit County, and Japanese quince and Japanese rose at Morgan. Tent caterpillars (Malacosoma spp.) did much more damage to shade trees and ornamentals than previously at Springdale, Rockville, and Hurricane, Washington County, in April. They were causing considerable annoyance in houses. (May 9): Injury was severe in the Green River and Elgin areas, especially on poplars and cottonwoods; also damaging shade trees at Bluff, San Juan County. Caterpillars were severely damaging foliage of cherry, peach, apricot, and apple trees in orchards; also black willow, elm, poplar, boxelder trees, and ornamental shrubs in the vicinity of Moab and southeast in Spanish Valley. Orchard and shade trees severely damaged throughout Wayne County. (May 13): There were reports of cherry trees being damaged in an orchard at East Kaysville.

NEVADA BUCK-MOTH (Hemileuca nevadensis Stretch)

Nebraska. H. D. Tate (May 17): A twig of cottonwood tree, infested with eggs, was received from Hitchcock County on April 30, and a twig from a Chinese elm tree, infested with eggs, was received from the same county on May 6.

BROWN-TAIL MOTH (Nygma phaeorrhoea Donov.)

New England. L. D. Casey (May 23): Heavy scattered infestations in York County, Maine, in Rockingham and Strafford Counties, N.H., and in Essex County, Mass. Many old apple and pear orchards were completely defoliated.

A BORER (Scolytus sulcatus Lec.)

Connecticut. P. P. Wallace (May 23): Abundant in apple trees injured by flood near the Connecticut River, causing only secondary injury, at Portland, Middlesex County. The insect was common in maple and elm in East Windsor, Hartford County, in hurricane-injured trees.

TERRAPIN SCALE (Lecanium nigrofasciatum Perg.)

Missouri. L. Haseman (May 26): Reported as completely encrusting branches of osage orange in north-central Missouri.

COMMON RED SPIDER (Tetranychus telarius L.)

Indiana. J. J. Davis (May 27): Very severe on conifers at La Fayette. Early appearance is probably caused by dry weather.

ASH

AN APHID (Prociphilus fraxinifolii Riley)

Arizona. C. D. Lebert (May 15): A general, heavy infestation on most ash trees in the Phoenix area occurred during the first half of May. Severe leaf curl and much drip from honeydew resulted. Several parasites and predators were observed.

Utah. G. F. Knowlton (May 14): Was curling leaves of ash at Taylorsville and Salt Lake City. (May 20): Curled ash foliage at Moroni. (May 22): Curled green ash foliage at Morgan.

ASH MIDRIB GALL (Contarinia canadensis Felt)

Maryland. E. P. Felt (May 23): Found extremely abundant on one tree at Baltimore.

AN ASH SAWFLY (Tomostethus multicinctus Roh.)

Minnesota. A. G. Ruggles (May 19): An ash sawfly, probably this species, was stripping many ash trees around Saint Paul and Minneapolis.

BIRCH

BRONZE BIRCH BORER (Agrilus anxius Gory)

Ohio. E. W. Mendenhall (May 23): Destroying nearly all of the birch trees in Dayton, Springfield, and Columbus.

Iowa. C. J. Drake (May 29): The bronze birch borer has been reported in cut-leaf birches in Varina, in the northwestern part of the State, and in Des Moines.

BOXELDER

BOXELDER APHID (Periphyllus negundinis Thos.)

South Dakota. H. C. Sevorin and G. I. Gilbertson (May 23): Bad on boxelders.

Utah. G. F. Knowlton (May 22): Beginning to be abundant on the foliage at Nephi and Morgan.

PIGEON HORNTAIL (Tremex columba L.)

Utah. G. F. Knowlton (May 14): Killing several large boxelders at Taylorville, Salt Lake County.

ELM

ELM LEAF BEETLE (Galerucella xanthomelaena Schr.)

Massachusetts. E. A. Back (May 26): Annoying in households at Lowell on April 21; at Winchester on April 23, at Wellesley Hills and Belmont on April 30, at Wakefield on May 14, and at Dover, in the eastern part of the State, on May 26.

Rhode Island. E. A. Back (April 23): Annoying in households at Saylesville, Providence County.

New York. R. E. Horsey (May 23): Reported as common in an old house which is occupied part of the time. The house is located in a subdivision

of Rochester that was formerly a nursery and a large amount of elm brush and trees were found to have the characteristic holes in the young leaves and fresh-laid eggs. A number of beetles were caught in the house the past week.

E. A. Back (May 26): Annoying in households at Millbrook, Dutchess County, and Nyack, Rockland County, on April 25, at Tarrytown, Westchester County, on April 26, at Yonkers on April 24, at Irving-on-Hudson on April 24, at New York City on April 20, at Montgomery, Orange County, on May 14, at Millbrook on May 17, at Washington on May 19, and at Thornwood, Westchester County, on May 26.

New Jersey. C. L. Griswold (May 26): Adults out of hibernation in Morristown vicinity were first observed on April 15, which is nearly 4 weeks earlier than last year when adults were observed on May 12. First oviposition of the season was noted on May 7.

E. A. Back (May 26): Annoying in households at Madison on April 22, at Montclair on May 17, at Morristown on May 14, and at East Orange on May 16.

Pennsylvania. E. A. Back (May 26): Annoying in households at Pottstown on May 5, at Dillsburg, York County, on April 30, at Philadelphia on May 19 and 26, and at Washington Crossing on May 26.

Maryland. E. N. Cory (April 24): Egg laying observed today at College Park on elms.

#### SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatus* Marsham)

New Jersey and New York. C. W. Collins, et al. (May 14): Emergence and activity of bark beetles was noted to be at least 2 weeks earlier this year than last. On May 1 emergence of this species was observed in southern New Jersey and at Peekskill, N. Y.

#### NATIVE ELM BARK BEETLE (*Hylurgopinus rufipes* Eich.)

New Jersey. C. W. Collins, et al. (May 14): Overwintering adults were observed on April 11; eggs in new maternal galleries were seen on April 23.

#### ELM LEAF MINER (*Agronyza ulmi* Frost)

Connecticut. E. P. Felt (May 23): Although a native insect and reported as common in Pennsylvania, has been noted for the first time in southwestern Connecticut; it is apparently somewhat common though not especially injurious.

#### ELM COCKSCOMB GALL (*Colopha ulnicola* Fitch)

Delaware. L. A. Stearns (April 24): Noted on elm at Felton in Kent County.

WOOLLY APPLE APHID (Eriosoma lanigerum Haussm.)

Georgia. J. M. Robinson (May 23): Found on elms at West Point.

Mississippi. C. Lyle and assistants (May 24): Some damage to elm leaves in Lauderdale County; also observed on young apple trees in Holmes and Scott Counties.

EUROPEAN ELM SCALE (Gossyparia spuria Mod.)

Utah. G. F. Knowlton (May 16): Has been damaging many trees at Logan. Injury was also noticed at Brigham. (May 22): Was attacking a long row of trees surrounding the fair ground, and elms on the courthouse ground, at Morgan. Injury is apparent on many trees.

FIR

APHIDS (Aphididae)

Pennsylvania. G. B. Sleesman (May 24): Egg masses of an aphid were found on the branches and trunks of Abies nordmanniana, Nordmann fir, in Philadelphia. No adults were found. (May 21): Mindarus abietinus Koch appeared on concolor fir and Abies veitchi about a month ago in Philadelphia. Winged adults have left the host plants. Efforts were made to determine what host plants these insects were going to but had not been determined yet.

JUNIPER AND CEDAR

JUNIPER WEBWORM (Dichomeris marginellus F.)

Delaware. L. A. Stearns (May 2): Attacked juniper at Bridgeville.

Pennsylvania. G. B. Sleesman (May 21): A very heavy infestation found in various localities of the Philadelphia vicinity. In some localities the insect is still in the larval form, others have pupated, and in other places, the moths are emerging.

CEDAR BARK BEETLE (Phloeosinus dentatus Say)

Virginia. L. A. Metrick (May 20): Adults and larvac are numerous in King William County under the bark of several dying red cedar trees.

JUNIPER SCALE (Diaspis carueli Targ.)

Oregon. J. Schuh (May 20): This scale is in the egg stage on juniper at Portland.

HICKORY

HICKORY BORER (Cyllene caryae Gahan)

Illinois. A. F. Satterthwait (May 24): Appeared in numbers in the Urbana-Champaign Japanese beetle traps from April 29 to May 8.

LARCH

LARCH CASEBEARER (Colcophora laricella Hbn.)

Massachusetts. C. E. Hood (May 20): Has caused an almost total browning of a large number of larch trees in the western section of the State.

W. W. Bancroft (May 27): Infestation general and severe throughout western Massachusetts.

New York. E. P. Felt (May 23): Injury is somewhat conspicuous here and there in areas within 50 miles of New York City.

R. E. Horsey (May 2): Numerous on American, Dahurian, and other larches in an ornamental planting at Rochester.

LOCUST

A CECIDOMYIID (Dasyneura gleditsiae O.S.)

Alabama. F. S. Arant (April 22): Larvae were doing considerable damage to plants of honey locust at Auburn. (Det. by C. T. Greene.)

SAWFLIES (Tenthredinidae)

Missouri. W. F. Turner (May 26): Locust sawfly is exceedingly abundant throughout much of the State where black locust has been planted extensively in connection with soil conservation. The oldest larvae began maturing during the third week in May.

MAPLE

WOOLLY MAPLE SCALE (Phenacoccus acericola King)

Georgia. M. Murphey, Jr. (May 28): Numerous reports and specimens from Atlanta brought into the office during the past 2 weeks. The woolly covering blowing on porches and into houses is bothersome. Honeydew is very abundant.

BLADDER MAPLE LEAF GALL (Phyllocoptes quadripes Shim.)

Indiana. J. J. Davis (May 27): Rather prevalent in central Indiana during the last few weeks.

Connecticut. E. P. Felt (May 23): Locally abundant on soft maples in southwestern Connecticut.

Ohio. T. H. Parks (May 23): Specimens received from several correspondents during the month.

Michigan. R. Hutson (May 21): On May 5 this insect was reported from Detroit, Jackson, Fennville, Shelbyville, and Ann Arbor, in the southern part of the State.

GOUTY MAPLE GALL (Dasyneura communis Felt)

Indiana. J. J. Davis (May 27): Rather prevalent the last few weeks, according to reports from many parts of central Indiana.

Kentucky. W. A. Price (May 26): Noted on maple and oak, and more common than usual.

OCELLATE MAPLE LEAF GALL (Cecidomyia ocellaris O.S.)

Indiana. J. J. Davis (May 27): Rather prevalent the past few weeks in central Indiana.

AN APHID (Drepanaphis acerifoliae Thos.)

Arkansas. W. J. Baerg (May 9): Apparently rather heavily infesting the sugar maple trees in Fayetteville, in the northwestern part of the State. Some of the trees are shedding to an alarming degree.

A MIRID (Coccobaphes sanguinareus Uhl.)

Tennessee. G. M. Bentley (May 23): On May 15 the maple bug occurred in great quantities on hard maple trees in Knoxville, Knox County. Falling to the ground the insects were found upon the grass. The brilliant red of these insects attracted considerable attention. The first time this insect was noted occurring in large numbers in the State.

OBSCURE SCALE (Chrysomphalus obscurus Const.)

Tennessee. G. M. Bentley (May 23): Occurred on sugar and soft maples in Knoxville and caused death to the limbs in several infestations.

AN OLETHRÆTID (Prateoteras aesculana Riley)

Tennessee. W. F. Turner (May 12): Small lepidopterous larvae boring in tips of new shoots of silver maple, collected May 6 at Chattanooga, were reported as causing severe injury on several trees. Were present last year also. (Det. by C. Heinrich.)

MESQUITE

A PHALAEINID (Melipotis acontiooides Guen.)

Arizona. C. D. Lebert (May 12): The Palo Verde semi-looper was observed on several mesquite trees in the Phoenix area. Was moderately abundant. Found crawling into houses in one instance.

OAK

OAK LEAF ROLLER (Argyrotoxa semipurpurana Kearn.)

New Jersey. C. L. Griswold (May 26): Severe defoliation of pin oak was observed on May 24 at the East Orange Water Reservation, Essex County,

and in Florham Park. This is the fourth successive year in which defoliation by this insect has been observed in these areas.

GALL INSECTS (Andricus spp.)

Massachusetts. E. P. Felt (May 23): A. clavulus O. S., the white oak gall, caused a somewhat general infestation on a large tree in the Boston area.

Connecticut. E. P. Felt (May 23): The oak crown gall, A. coronus Beutm., was found somewhat commonly on pin oaks at Bridgeport and Stamford.

New York. E. P. Felt (May 23): A. coronus was found somewhat commonly on pin oaks at Westbury, L. I.

Mississippi. C. Lyle (May 24): The cecidomyiid, Parallelodiplosis floridana Felt caused galls on oak leaves from Coahoma County on May 13.

AN APHID (Longistigma caryae Harr.)

Maryland. R. W. Riemenschneider (May 14): Large black aphids (both winged and wingless) collected in Hyattsville on May 13. Aphids occurred in groups or masses on the lower portions of the trunks of white oak trees 10 to 12 inches in diameter. (Det. by P. W. Mason.)

A LACEBUG (Corythucha arcuata Say)

Delaware. L. A. Stearns (May 24): Overwintered adults were abundant in New Castle County on white oak after May 15, and egg laying was in progress.

PUBESCENT OAK KERMES (Kermes pubescens Bogue)

Nebraska. H. D. Tate (May 17): Bur oak twigs sent in from Gage County, in the southeastern part of the State, on April 16 were found infested.

AN OAK SCALE (Lecanium quercifex Fitch)

Mississippi. C. Lyle (May 24): Specimens on oaks were received from Hinds and Jasper Counties the last week in April and the first week of May.

PINE

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana Schiff.)

Connecticut. E. P. Felt (May 23): Pupation has commenced at Stamford.

J. V. Schaffner, Jr. (May 23): Observed as abundant in forest and ornamental plantings of pine, particularly red pine, in many localities through Fairfield and New Haven Counties.

New York. E. P. Felt (May 23): Is somewhat generally prevalent; one bad infestation being reported from Rockland County.

J. V. Schaffner, Jr. (May 23): Observed as abundant in forest and

ornamental plantings of pine, particularly red pine, in many localities through Nassau and Westchester Counties.

New Jersey. J. V. Schaffner, Jr. (May 23): Observed as abundant in forest and ornamental plantings of pine, particularly red pine, in many localities through Morris County.

A PINE SHOOT MOTH (Rhyacionia rigidana Fern.)

Virginia. L. A. Hetrick (April 30): First emergence of adults from infested pine shoots collected last September in Mathews County were held in insectary at West Point. (Det. tentatively from larvae by C. Heinrich.)

A PINE LOOPER (Elloplia pellucidaria G. & R.)

Virginia. L. A. Hetrick (May 1): Adults were abundant in pine woods in King William, King and Queen, and Caroline Counties, in the eastern part of the State.

PINE SAWFLIES (Tenthredinidae)

New Jersey. C. L. Griswold (May 26): First adults of and egg laying by Acantholyda erythrocephala L. observed on April 26 at Morristown. Larvae in second- and third-feeding instars noted on May 26. Observations of this species in Morris, Essex, and Somerset Counties up to May 26 indicate a decrease in the population from that of last year.

F. A. Soraci (May 15): Eggs of this species observed hatching today near Clinton on Pinus resinosa.

C. L. Griswold (May 26): General, as well as first observed hatching of a pine sawfly, Neodiprion sertifer Geoff., noted on April 19 in the vicinity of Morristown, which is nearly 4 weeks earlier than in 1940, when hatching was first observed on May 7. Observations on May 23 and 24, when the larvae were found to be in the last two feeding instars, indicated a further increase in the population of this sawfly over the preceding year in Morris, Essex, and Somerset Counties.

XYELID GALLS (Xyela spp.)

Virginia. L. A. Hetrick (May 20): Galls containing larvae are abundant on tender new growth shoots of Pinus taeda in King and Queen County. Galls cause death of the shoots or result in deformed branches. (Det. by R. A. Cushman.)

PINE BEETLES (Dendroctonus spp.)

Massachusetts. E. P. Felt (May 23): Turpentine beetles, both D. valens Lec. and D. terebrans Oliv., are causing considerable injury to pines in the Cape Cod area.

PALES WEEVIL (Hylobius pales Hbst.)

Massachusetts. E. P. Felt (May 23): Caused considerable injury to small pines in the Cambridge area and also at Taunton.

Rhode Island. B. Eddy . . . (April 31): Although no weevils have been submitted, there is evidence of extensive feeding on white pine reproductions in sunny areas. Apparently as a result of the drying out of hurricane-felled timber the beetles are transferring their attention to young growth.

APHIDS (Aphidae)

Connecticut. E. P. Felt (May 23): Cinara strobi Fitch appears to have been abundant and at least somewhat injurious to white pines in scattered localities in southwestern Connecticut.

Pennsylvania. G. B. Sleesman (May 21): Aphids (undetermined) were found feeding on the new growth of jack pine in large numbers at Philadelphia. Both wingless and winged forms were present. (May 21): Aphid noted on new growth of Scotch pine in Philadelphia. Numerous egg clusters were found on stems where winged adults were found.

Maryland. E. N. Cory (April 30): There was a light infestation of Pineus strobi Htg. at Pikesville, Roslyn County, on white pine.

Michigan. R. Hutson (May 21): Lachnus sp. very numerous at Grand Rapids on white pine on May 20 as well as at Milford on jack pine.

PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

Connecticut. M. P. Zappe (May 22): Appears to be increasing in abundance. Noted on Mugho, red, and Scotch pines. A number of years ago this insect was rather scarce but is now rather plentiful, especially on ornamental plantings of Mugho pines.

New York. E. P. Felt (May 23): Moderately abundant and in some cases extremely so on Mugho pine in much of the area within 50 miles of New York City.

Nebraska. H. D. Tate (May 17): Samples of injury to spruce were submitted from Sheridan and Lincoln Counties on April 28 and May 9, respectively.

SPRUCE

SPRUCE NEEDLE MINER (Taniva albolineana Kearf.)

Michigan. R. Hutson (May 2): Specimens were received from Pontiac and Detroit.

SPRUCE LEAF TIER (Epinotia nanana Treit.)

Michigan. R. Hutson (May 1): Larvae of this needle miner were submitted from Pontiac.

SITKA SPRUCE GALL APHID (Adelges cooleyi Gill.)

Connecticut. E. P. Felt (May 23): Somewhat abundant and injurious in southwestern Connecticut.

New York. E. P. Felt (May 23): Is somewhat abundant and injurious in southeastern New York.

Pennsylvania. G. B. Sleesman (May 21): A very heavy infestation has been observed, both on Douglas fir and spruce, in Philadelphia. Winged insects were observed migrating from fir to spruce last week in large numbers.

EASTERN SPRUCE GALL APHID (Adelges abietis L.)

Pennsylvania. G. B. Sleesman (May): Infestations seem to be increasing in Philadelphia. It has been found this year on Norway spruce in several new locations where it had not been found previously.

SPRUCE BUD SCALE (Physokermes piceae Schr.)

New York. E. P. Felt (May 23): Found on a badly infested Norway spruce at Cazenovia, Madison County; also reported from Westchester County.

A SAWFLY (Tenthredinidae)

Minnesota. A. G. Ruggles (May 19): A pamphiliid sawfly larva is doing a great deal of damage to new growth of spruces in Ramsey and Hennepin Counties.

WILLOW

LEAF BEETLES (Chrysomela spp.)

Ohio. T. H. Parks (May 23): Larvae of the spotted willow leaf beetle, C. lapponica L., have been feeding on willow leaves in Columbus during May.

Indiana. J. J. Davis (May 27): C. lapponica and C. scripta F. are abundant in many parts of the State. They showed up in unusual numbers in southern Indiana early in the month.

Mississippi. C. Lyle (May 24): C. scripta specimens were received from Jasper County on May 9.

IMPORTED WILLOW LEAF BEETLE (Plagiodera versicolora Laich.)

Virginia. A. M. Woodside (May 24): Small pussy willow trees at Fisherville, Augusta County, were fairly heavily infested. Damage was light.

I N S E C T S A F F E C T I N G G R E E N H O U S E A N D  
O R N A M E N T A L P L A N T S

A SCALE (Parlatoria chinensis Marlatt)

Missouri. L. Haseman (May 26): Crawlers observed about the middle of May at Saint Louis, with eggs appearing a week or 10 days earlier.

COTTONY-CUSHION SCALE (Icerya purchasi Mask.)

South Carolina. F. F. Bondy, et al. (May 17): Seriously injuring roses. Also appeared on other shrubbery on two properties in Florence during the week. Severe infestation.

Missouri. J. A. Denning (March 7): Specimen of an insect new to us found in a Saint Louis greenhouse. (Det. by H. Morrison.)

Texas. R. K. Fletcher (May 22): On May 19 orange and rose in Harris County were infested by the cottony-cushion scale.

OYSTERSHELL SCALE (Lepidosaphes ulmi L.)

Maryland. E. N. Cory (April 24): Present on lilac at Thurmont, Frederick County.

Nebraska. H. D. Tate (May 2): Heavily infested lilac twig received from Lincoln County.

Minnesota. A. G. Ruggles and assistants (May 11): Very abundant in Lewiston, Winona County, in the southeastern part of the State.

South Dakota. H. C. Severin and G. I. Gilbertson (May 23): Reported frequent from various parts of the State.

Utah. G. F. Knowlton (May 14): Poplars at Taylorsville, Salt Lake County, heavily infested. (May 22): Several lilac bushes and some poplar and willow trees at Morgan have been damaged.

HAIRY CHINCH BUG (Blissus hirtus Montd.)

Maine. J. H. Hawkins (May 6): Unusually abundant in grassland, and present in many hayfields and in grass along roadsides throughout central Maine. (Det. by H. G. Barber.)

BLACK VINE WEEVIL (Brachyrhinus sulcatus F.)

Rhode Island. B. Eddy (May 6): Grubs are very numerous around base of Taxus plants in Cranston, Providence County.

Maryland. E. N. Cory (April 16): Present on yews at Baltimore.

ARBORVITAE

ARBORVITAE LEAF MINER (Argyresthia thuiella Pack.)

Connecticut. E. P. Felt (May 23): Moderately abundant and somewhat injurious in southwestern part of the State.

AZALEA

AZALEA SCALE (Eriococcus azaleae Comst.)

Mississippi. C. Lyle and assistants (May 24): Specimens of infested azalea plants received from Adams and Coahoma Counties, in the western part of the State. Reported as injuring azalea in Copiah, Pike, and Walthall Counties, in the southwestern part of the State.

AZALEA LACEBUG (Stephanitis pyrioides Scott)

Mississippi. C. Lyle (May 24): Lacebugs probably belonging to this species were reported as severely damaging azalea plants in the Meridian territory.

BARBERRY

BARBERRY APHID (Rhopalosiphum berberidis Kltb.)

Utah. G. F. Knowlton (May 22): Attacking ornamental barberry at Morgan.

BOXWOOD

BOXWOOD LEAF MINER (Monarthropalus buxi Laboulb.)

Rhode Island. B. Eddy (May 6): Indications are that this insect will be particularly destructive on dwarf and larger varieties of boxwood.

Pennsylvania. T. L. Guyton (May 2): Found on boxwood bushes at Pottstown, Montgomery County.

District of Columbia. L. G. Baumhofer (May 2): First emergence today in Washington, 12 days earlier than in 1940.

CANNA

LESSER CANNA LEAF ROLLER (Geshna cannalis Quaint.)

Mississippi. C. Lyle (May 24): Specimens received from Lincoln County early in May.

CHRYSANTHEMUM

CHRYSANTHEMUM APHID (Macrosiphoniella sanborni Gill.)

Georgia. P. M. Gilmer (May 3): Considerable numbers have been noted in Tift, Lowndes, and Echols Counties.

DAHLIA

STALK BORER (Papaipema nebris nitela Guen.)

Alabama. J. M. Robinson (May 7): Found on dahlias at Birmingham.

EUONYMUS

EUONYMUS SCALE (Chionaspis euonymi Comst.)

Connecticut. E. P. Felt (May 23): Found extremely abundant on a small planting of Euonymus alatus at Southport, Fairfield County.

South Carolina. F. F. Bondy, et al. (May 17): Heavy infestations observed in one location in Florence during the week ended May 17.

Texas. R. K. Fletcher (May 13): Heavy infestation on euonymus in Dallas County.

GLADIOLUS

GLADIOLUS THRIPS (Taeniothrips simplex Morison)

South Carolina. W. M. Upholt (May 14): Found causing light to moderate damage on gladiolus foliage at Clemson.

Alabama. J. M. Robinson (May 23): Found on gladioli at Montgomery.

JUNIPER AND CEDAR

AN APHID (Cinara juniperi Deg.)

Virginia. G. J. Haussler (April 13): Severe infestation observed on juniper shrubs at Charlottesville. (Det. by P. W. Mason.)

LILY

A THRIPS (Parthenothrips dracaenae Heeger)

Mississippi. C. Lyle (May 24): Specimens on calla lily from Adams County sent in on May 5. First time this insect has been received in this office.

MOCKORANGE

BEAN APHID (Aphis rumicis L.)

Michigan. R. Hutson (May 21): Very noticeable on mockorange and species of euonymus about East Lansing.

RHODODENDRON

RHODODENDRON MIDGE (Giardomyia rhododendri Felt)

New York. E. P. Felt (May 23): Specimen of damage received from White Plains.

ROSE

APHIDS (Aphididae)

South Carolina. F. F. Bondy, et al. (May 17): Reported as injuring roses at Florence during the week ended May 17.

Alabama. J. M. Robinson (May 15): Rose aphids were found on roses at Auburn.

Mississippi. G. L. Bond (May 24): Aphids on roses reported from the southeastern counties.

Missouri. L. Haseman (May 26): Aphids reported as numerous on roses.

Utah. G. F. Knowlton (May 16): Aphids are moderately abundant on terminal growth and buds of wild rose at Brigham, Perry, and Willard. (May 18): Macrosiphum solanifolii Ashm. is attacking succulent rose tips at Salt Lake and Brigham.

Washington. L. G. Smith (April): Rapid build-up of aphid population on a climbing rose on the south side of a house at Yakima was reported on April 24. Moderate damage was done. On April 29 aphids were reported as doing severe damage to tea roses at Moscow, Idaho, near the Washington border.

THIRIPS (Thysanoptera)

Mississippi. L. J. Goodgame (May 24); Several complaints of thrips on roses in Monroe County.

Texas. R. K. Fletcher (May 22): Frankliniella tritici Fitch and unidentified thrips have been very abundant, and have done considerable damage to roses during the last month in Brazos County.

ROSE CURCULIO (Rhynchites bicolor F.)

Utah. G. F. Knowlton (May 20): Found on wild rose at Moroni.

SNOWBALL

APHIDS (Aphididae)

Utah. G. F. Knowlton (May 13): Two species of aphids are injuring snowball leaves and blossoms in various parts of Davis County. (May 22): Aphis rumicis L. and A. yiburnicola Gill. are extremely abundant, destroying blossoms and tightly curling all leaves on snowball bushes on the courthouse grounds at Morgan.

SPIREA

SPIREA APHID (Aphis spiraecola Patch)

Ohio. E. W. Mendenhall (May 20): Numerous and causing some damage to spirea plants at Columbus.

Missouri. L. Haseman (May 26): Terminal growth on spirea fairly covered with a small, green aphid.

## I N S E C T S A T T A C K I N G M A N A N D

### D O M E S T I C A N I M A L S

#### MAN

##### MOSQUITOES (*Culicinae*)

Florida. J. B. Hull (April 30): A very few mosquitoes, all of which were Aedes sollicitans Walk., were observed on the island east of Fort Pierce during the month.

Missouri. L. Haseman (May 26): Species of pest mosquitoes have been very annoying since the middle of May, through central Missouri, in areas close to favorable breeding grounds.

Utah. G. F. Knowlton (May 20): Aedes dorsalis Meig. and A. campestris D. & L are annoying to man and to recently shorn sheep west of Chester, Manti, and near Wales, in Sanpete County.

##### SANDFLIES (*Culicoides* spp.)

Florida. W. E. Dove (May 14): Sandflies, C. mississippiensis Hoffm., were present in annoying numbers near breeding places and in the vicinity of nearby residences.

J. B. Hull (April 30): More sandflies were observed in the vicinity of Fort Pierce during the month of April than in several months. Annoyed humans residing along the Indian River Drive and north of the Inlet and those in the Maravilla subdivision for a few nights.

Missouri. L. Haseman (May): Punkies were extremely abundant and annoying during the third week in May at two or three different points in the central part of the State.

##### FLEAS (*Ctenocephalides* sp.)

South Carolina. F. F. Bondy, et al. (May 24): The report for the week ended May 24 in Florence, Florence County, showed a heavy infestation of dog fleas from one home.

Florida. W. V. King and F. C. Bishopp (May): Cat fleas (*Ctenocephalides*) were reported on May 27 as infesting several houses at Orlando. One infestation beneath a house and in a yard was found to be C. felis Bouche.

Mississippi. C. Lyle (May 24): Fleas were reported to be numerous about dwellings and barns in one locality in Neshoba County and one in Tallahatchie County but no specimens were received.

Missouri. L. Haseman (May 26): Heavy flea infestations on farms throughout the State have been reported and some, when checked, proved to be caused by hogs.

BEDBUG (*Cimex lectularius* L.)

South Dakota. H. C. Severin and G. I. Gilbertson (May 23): More than the usual number of inquiries have been received concerning bedbugs, cockroaches, and black carpet beetles.

LONE STAR TICK (*Amblyomma americanum* L.)

Florida. W. E. Dove (May 15): This tick was observed occasionally on animals during the month, but not in large numbers, at Panama City.

Mississippi. C. Lyle (May 24): Specimens sent in for identification from Leake County, in the central part of the State, on April 26.

Missouri. L. Haseman (May 26): The lone star tick continues to attack dogs, cats, and man in central Missouri in greater numbers than has been observed in recent years. A number of the females have been laying eggs, and reports indicate that seed ticks are beginning to prove annoying in different parts of southern Missouri.

GULF COAST TICK (*Amblyomma maculatum* Koch)

Florida. W. E. Dove (May 19): Adults of the Gulf coast tick were observed at Bonifay, Holmes County, in the northwestern part of the State. One male and one female were found on a single animal.

AMERICAN DOG TICK (*Dermacentor variabilis* Say)

Massachusetts. C. N. Smith (April 30): Adults of the American dog tick became very active during April; larvae became moderately abundant on mice, and some nymphal activity was observed at Vineyard Haven.

(May 21): Adults became numerous early in May, slightly sooner than in some years. Abundance in most areas will apparently be greater than normal, but not as great as in 1939.

Missouri. L. Haseman (May 26): The dog tick continues to attack dogs, cats, and man in greater numbers than has been observed in recent years in central Missouri. A number of the females have been laying eggs and reports indicate that seed ticks are beginning to prove annoying in different parts of the southern section of the State.

CATTLE

SCREWWORM (*Cochliomyia americana* C. & P.)

Florida. F. C. Bishopp (May 24): Apparently very little trouble is being experienced with screwworms along the east coast. At New Smyrna, Volusia County, on the east coast, however, a few cases were reported as occurring during the spring. One dairyman reported that one calf out of four dropped within the last few weeks was found to be infested. Infestation in the Kissimmee area is relatively light and flies are not very persistent. J. Gunn, of Kissimmee, stated that about

1 or 2 percent of the calves dropped during the last 6 weeks were infested and that they usually healed with one treatment. Hogs in the northern part of Osceola County and in the southern part of Orange County have been infested. One herd of 60 hogs was about 20 percent infested.

California. A. W. Lindquist and C. C. Deonier (April 28): Reporters feel certain that C. macellaria F. and C. americana are nonexistent north of Sacramento, and will remain so unless brought in by infested livestock.

#### STABLEFLY (*Stomoxys calcitrans* L.)

Florida. W. E. Dove (May 19): Adult dog flies on range cattle vary from 2 or 3 to 10 or 15 per animal.

Missouri. L. Haseman (May 26): Stableflies were observed annoying livestock in central Missouri by the middle of May.

#### HORNFLY (*Haematobia irritans* L.)

Florida. F. C. Bishopp (May 20-27): A dairy herd near New Smyrna Beach had an average of about 200 horn flies per animal. Cattle near Pensacola average about 300 horn flies per head.

W. E. Dove (May 22): From 200 to 3,000 horn flies were observed on individual animals on the range in the lowlands.

#### CATTLE GRUBS (*Hypoderma* spp.)

Utah. G. F. Knowlton (May 20): Bots are present generally in the backs of cattle in Sanpete County and on May 22 they were found on cattle at Heber, in Wasatch County.

#### HORSE FLIES (Tabanidae)

Florida. W. E. Dove (May 20): Several species were observed attacking cattle and hogs near Panama City. Annoyance is rather severe. (May 23): Livestock near Fort Pierce observed to be considerably annoyed by horse flies.

#### SHEEP

#### SHEEP BOTFLY (*Oestrus ovis* L.)

Utah. G. F. Knowlton (May 20): Each year some sheep, usually old ewes, die of head maggots in Sanpete County.

#### FLEECE WORMS (*Phormia* sp.)

Florida. W. E. Dove (May 19): Fleece worms were observed by ranchmen on one medium wool sheep at Bonifay, and shearing has been in progress in northwestern Florida during the latter half of May.

California. A. W. Lindquist (April 28): Woolworms have been causing some infestations for the last few weeks in the upper Sacramento Valley.

SHEEP TICK (*Ixodes ovinus* L.)

Illinois. W. E. McCaulley (May 21): Out of 18 flocks of sheep examined in as many southern and central Illinois counties, 14 were "ticky." All flocks not dipped last season were "ticky" and 2 flocks reported as having been dipped last season were also "ticky."

Utah. G. F. Knowlton (May 20): Sheep ticks are abundant on lambs generally in Sanpete County, causing a great deal of injury.

A BITING LOUSE (*Trichodectes ovis* L.)

Illinois. W. E. McCaulley (May 21): Eighteen flocks of sheep in as many southern and central Illinois counties were examined, and 16 flocks were infested, some very severely. The damage consisted of rubbed wool prior to shearing.

HOUSEHOLD AND STORED-PRODUCTS INSECTS

TERMITES (Isoptera)

Connecticut. M. P. Zappe (May 22): Have had about as many complaints as usual about Reticulitermes flavipes Koll.

New Jersey. J. C. Silver (May 19): R. flavipes infestations are extremely numerous in houses in northern New Jersey. Light to severe damage reported.

Pennsylvania. T. L. Guyton (April 28): Termites were found in wood in the basement of a building at Upper Darby, Delaware County, in the south-eastern part of the State. (Det. by T. L. Guyton and Mrs. Bessie Roberts.) (May): On May 1 termites were found in a cellar or basement of cellar windows at Shamokin, Northumberland County, in the eastern part of the State. On May 2 they were found in the timbers of a home in Philadelphia, and on May 6 in a basement of a house in Philadelphia.

Maryland. E. N. Cory (May 5): Numerous correspondents sending in specimens and requests for help, from every section of the State.

North Carolina. C. H. Hoffmann (May 19): On May 2 numerous termite flights were reported as occurring in an area approximately 1 mile long and  $\frac{1}{2}$  mile wide in north Asheville.

Ohio. E. W. Mendenhall (May 20): Termites are quite bad in certain places in Columbus and have done some damage before they were noticed.

Michigan. R. Hutson (May 21): Termites have been reported from Niles and from Greenville, where they were particularly numerous in houses on May

Tennessee. G. M. Bentley (May 23): Several swarms of R. flavipes have been reported emanating from stumps and from the sills of old buildings, in different sections of the State.

L. B. Scott (May 19): Termites are reported as very abundant in the north-central part of the State, in the vicinity of Clarksville. Damage appears to be greater than in any previous year.

Missouri. L. Haseman (May 26): Reports on termites received throughout most of the month of May.

A. C. Burrill (May 7): Second swarm of R. flavipes noted on Clark Avenue, Jefferson City, Mo.

South Dakota. H. C. Severin and G. I. Gilbertson (May 23): An outbreak of termites has been located at Sibley Falls, where they have been found doing considerable damage to buildings. Termites have destroyed two walnut trees at Gregory, in the southeastern part of the State.

Nebraska. H. D. Tato (May 17): Winged and worker specimens of R. flavipes were found in an old frame building in Madison County and sent in for identification on May 1. R. tibialis Banks was reported from Douglas County on April 16 as damaging tomato plants and carrots, and from Harlan County on April 21 as injuring vegetation, including fruit, shade, and forest trees.

Utah. G. F. Knowlton (April 21): R. tibialis was severely damaging stops, floors, and timbers in a house at Smithfield. Specimens submitted by G. F. Knowlton on April 16. (Det. by T. E. Snyder.)

California. P. Simmons (March 14): Specimens of R. tibialis forwarded by P. Simmons with his letter of March 7, with the following note: "Following a rain, several hundred adults emerged in the laboratory at Fresno." (Det. by T. E. Snyder.)

#### ANTS (Formicidae)

Maryland. E. N. Cory (May 5): Numerous requests for information. The ants are attacking houses and lawns.

District of Columbia. E. A. Back (April 12): Lasius interjectus Mayr was collected in a house in Washington, D. C., on April 10.

F. C. Bishopp (April 25): Paratrechina longicornis Latr. was found on a table in a restaurant at Washington, D. C., on April 24. (Det. by M. R. Smith.)

Ohio. E. W. Mendenhall (May 20): Lawn ants are doing considerable damage to lawns in Columbus and vicinity.

Illinois. W. E. McCaulley (May 21): L. interjectus was mistaken for termites in many cases reported in houses in central Illinois.

Ohio. T. H. Parks (May 23): Mound-building ants active in lawns generally during April and May.

Michigan. R. Hutson (May 21): Carpenter ants, Camponotus spp., very troublesome in houses at Owosso, Shiawassee County, on April 29.

Mississippi. C. Lyle and assistants (May 24): Iridomyrmex humilis Mayr. reported from Monroe County. Pogonomyrmex badius Latr. were collected from a lawn in Harrison County on May 1. In the southwestern counties, fire ants, probably Solenopsis xyloni McCook, reported as injurious to strawberry plants by nesting near their roots. C. caryae decipiens Wheeler specimens received from Harrison County on May 13. Specimens of C. herculeanus pennsylvanicus Dog. received from Sunflower County on May 5.

Nebraska. H. D. Tate (May 17): Mound-building prairie ants, P. occidentalis Cress., reported from Hitchcock and Gosper Counties, in the southern part of the State, on May 3 and 6, respectively.

Utah. G. F. Knowlton (May): Ants annoying in houses and damaging a lawn at Logan on May 3. Reported as annoying at Farmington on May 13, and at Moroni on May 20.

#### CLOVER MITE (Bryobia praetiosa Koch)

Pennsylvania. E. A. Back (May 5): Specimens received from Washington Lane, Philadelphia.

New Jersey. J. C. Silver (May 8): Reported as being exceedingly numerous and very annoying in a house at Bloomfield. (Det. by F. C. Bishop.)

E. A. Back (May 26): Specimens from houses received from Leonia on April 30 and from Rutherford on May 6.

Maryland. E. A. Back (April 24): Specimens received from Baltimore.

Indiana. J. J. Davis (May 27): Reported as annoying in houses in many parts of the State during the first half of the month.

Illinois. E. A. Back (May 6): Specimens received from Peoria.

Nebraska. H. D. Tate (May 17): Heavy infestation observed in house in Lancaster County on April 5. Specimens received from Omaha on May 5. Reported as abundant in that vicinity.

Montana. E. A. Back (May 6): Specimens received from Missoula.

#### ORIENTAL COCKROACH (Blatta orientalis L.)

Pennsylvania. T. L. Guyton (May 6): Reported from New Castle.

Nebraska. H. D. Tate (May 17): Specimens were submitted from Saunders County, in the eastern part of the State, on May 5.

#### STORED-GRAIN INSECTS (Hexapoda)

Illinois. W. P. Flint (May 20): Adults of the Indian-meal moth (Plodia interpunctella Hbn.) appeared in shelled-corn storage in central Illinois

Michigan. R. Hutson (May 2): The saw-toothed grain beetle, (Oryzaephilus surinamensis L.) appeared in swarms in houses at Rogers City.

Minnesota. A. G. Ruggles and assistants (May): The rice weevil (Sitophilus oryzae L.) was infesting a bin of wheat in Lac qui Parle County, in the southwestern part of the State, on May 10. Cynacus angustus Lec. is present in stored corn in Ranscy County, in the southwestern part of the State. Tribolium madens Charp. found in large numbers in a sample of grain screenings sent into Minneapolis from Ranscy County.

Iowa. G. C. Decker (May 29): C. angustus was first observed as a stored-grain pest in Iowa in 1940 and is now frequently encountered in stored corn. Live larvae and adults taken from most of the infested bins indicate that this species is comparatively hard and has a state-wide distribution. The red flour beetle (T. castaneum), the most common insect pest of stored grain in Iowa, has been taken in practically all Iowa counties. Spring observations have shown a very high winter mortality of this species, except in large storage bins and bins where insect populations were able to maintain comparatively high temperatures throughout the winter. The prevalence of live adults of the flat grain beetle (Lacmophloeus minutus Oliv.) in practically all infested bins seems to brand this species as one of the most winter hardy of the common stored-grain insect pests. The foreign grain beetle (Cathartus advena Waltl.), found in stored corn throughout the State, has been greatly reduced by winter mortality, except in bins maintaining higher than average winter temperatures. The saw-toothed grain beetle (Oryzaephilus surinamensis) has been taken in stored corn in practically all counties within the southern half of the State but only scattered infestations have been recorded for northern Iowa. This species is comparatively winter hardy and live insects are easily found in bins known to be infested in 1940.

North Dakota. F. G. Butcher (May 23): Stored-grain insect pests reported as becoming more numerous. Infestation of L. minutus was observed in a storage elevator at Neche, Pembina County, in the northeastern part of the State, during the week ended May 24, but more primary grain pests were conspicuous by their absence in the infestation.

South Dakota. H. C. Severin and G. I. Gilbertson (May 23): S. oryzae, the cadelle (Tenebroides mauritanicus L.), O. surinamensis, the granary weevil (S. granarius L.), P. interpunctella, the confused flour beetle (T. confusum Duv.), C. advena, L. minutus, and C. angustus have been the most serious stored-grain pests in the State.

Nebraska. H. D. Tate (May 17): S. granarius and O. surinamensis were found in flour in Lancaster County on April 23. Specimens of S. granarius were submitted from Knox County on May 10. Reported as found in chicken feed and corn.

CASEMAKING CLOTHES MOTH (Nemopogon granella L.)

Michigan. E. A. Back (April 21): Two microlepidopterans reared from cork of wine bottle received from Detroit. Adults emerged April 11. (Det. by C. Heinrich.)

BLACK CARPET BEETLE (Attagenus piccus Oliv.)

New Jersey. J. C. Silver (May 19): Adults and larvae reported from area around Bloomfield. Infestations are very general, but little damage reported.

Pennsylvania. T. L. Guyton (April 23): Found in rugs and clothing at Charleroi, Washington County.

Iowa. C. J. Drake (May 29): Found breeding in tremendous numbers in processed cornstalks used as an insulation material in houses at Ames and Le Mars, necessitating the removal of all insulation material in the house at Ames.

South Dakota. H. C. Severin and G. I. Gilbertson (May 23): More than the usual number of inquiries received concerning bedbugs, cockroaches, and black carpet beetles.

DRUG STORE WEEVIL (Stegobium panicum L.)

New York. R. E. Horsey (May 5): Uncommon in an herbarium at Rochester. Live adult found today with a few small larvae.

Oregon. R. L. Post (May): Specimens collected in 1940 at Dayton, Yamhill County, from dried red peppers purchased at Yakima, Wash. (Det. by W. S. Fisher.)

WHITE-MARKED SPIDER BEETLE (Ptinus fur L.)

Minnesota. A. G. Ruggles and assistants (May): Reported a few times from Ramsey County during mid- and late-April.

PTINID BEETLE (Hadrobregmus carinatus Say)

Illinois. W. E. McCaulley (May 21): Very common throughout central area of State in softwood floor joists, especially in damp sections. Also found feeding in heart and sap portions of oak timbers.

A BORER (Dinoderus minutus F.)

Florida. E. A. Back (April 18): Bamboo basket received from Miami on April 18 heavily infested. (Det. by W. S. Fisher.)

CARPENTER BEE (Xylocopa virginica Drury)

District of Columbia. R. A. St. George (May 17): Active on porches and window sills during the last month and up to present time in Washington.



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SPECIAL NOTEINSECTS ON CACTUS

California. H. J. Ryan (March 17): During the course of a nursery survey at Hynes, Los Angeles County, on January 14, the cyanophyllum scale (Aspidictotus cyanophylli Sign.) was found on various succulents and cactus. Several species of cactus were found infested with snout moths (Melitara sp.).